

THE MARINE CORPS





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THE competition is open to all Marine Corps officers (active, retired, reserve) who are members of the Association. Articles offered shall not exceed 5,000 words and must be typewritten, double-spaced, on 8 x 10½ paper. Illustrations, photographs or sketches may accompany the article. Each competitor will send in a sealed envelope the article plus one copy to the Editor, Marine Corps Gazette, Room 3025 Navy Building, Washington, D. C., before October 31, 1936. The article shall be signed by a *nom de plume*. By separate post in sealed envelope, the full name and rank of the writer, with the *nom de plume*, shall be sent in to the same address. In determining the standing of the articles submitted, preponderance of weight will be given to their professional value, originality of ideas and the practicability of the line of thought. Literary merit is of secondary importance.

The Board of Officers of the Association will act as the Board of Judges. Any or all articles submitted will be subject to publication, with honorable mention, in the Marine Corps Gazette at the usual rates. All manuscripts submitted will become the property of the Marine Corps Association. None will be returned.



★ The November number of
the Gazette will announce the
results of the competition.

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THE MARINE CORPS GAZETTE

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Vol. 20

AUGUST, 1936

No. 3

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COVER

Reenactment of the Battle of Manassas

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OBJECT OF ASSOCIATION—"The Association is formed to disseminate knowledge of the military art and science among its members; to provide for the improvement of their professional attainments; to foster the spirit and preserve the traditions of the United States Marine Corps; and to increase the efficiency of its members."—Section 2, Article 1, of the Constitution.

CONDITIONS OF MEMBERSHIP—Active membership open to officers of the United States Marine Corps and Marine Corps Reserve and to former officers of honorable service with annual dues of \$3.00. Associate membership, with annual dues of \$3.00 open to officers of the Army, Navy and Organized Militia and to those in civil life who are interested in the aims of the Association. Honorary members shall be elected by unanimous vote of the Board of Officers.

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CONTRIBUTIONS—The GAZETTE desires articles on any subject of interest to the Marine Corps. Articles accepted will be paid for at the GAZETTE'S authorized rates. Non-members of the Association as well as members may submit articles. In accepting articles for publication, the GAZETTE reserves the right to revise or rearrange articles where necessary.

All communications for the Marine Corps Association and THE MARINE CORPS GAZETTE should be addressed to the Secretary-Treasurer, Marine Corps Association, Headquarters, U. S. Marine Corps, Washington. Checks for payment of dues should be made payable to the Secretary-Treasurer.

THE MARINE CORPS GAZETTE

LIEUTENANT COLONEL A. DeCARRE, U.S.M.C., *Editor*

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MR. MEMBER! BE SURE WE HAVE YOUR LATEST ADDRESS

THE MARINE CORPS GAZETTE

Vol. 20

AUGUST, 1936

No. 3

REENACTMENT OF THE BATTLE OF MANASSAS

■ On the twenty-first of July, 1936, a crowd estimated at 10,000 persons gathered around the edges of what was the last phase of the first Battle of Manassas. It was the seventy-fifth anniversary of this historic battle which took place during the Civil War between the Federal and Confederate Forces on July 21, 1861. The battle was reenacted by units of the First Marine Brigade, Fleet Marine Force, in conjunction with the 16th Brigade, U. S. Army, and certain R.O.T.C. units.

The Union Forces were represented by the units of the First Marine Brigade, Fleet Marine Force, and the Confederate Forces were represented by the 16th Brigade, U. S. Army, and R. O. T. C. units.

Colonel C. J. Miller, U. S. Marine Corps, representing General Irvin McDowell, U. S. Army, The Commander of the Union Forces, was in command of the units of the First Marine Brigade. Other Union leaders were impersonated by the following named officers of the First

Marine Brigade: Lieutenant Gilder D. Jackson—Colonel W. T. Sherman, Commanding Third Brigade, First Division; Major Donald Curtis—Colonel Willcox, Commanding Second Brigade, Third Division; Captain Philip L. Thwing—Colonel Cameron, Commanding 79th New York (Highlanders); First Lieutenant Jaime Sabater—Colonel Quinby, Commanding 14th New York; and Captain James M. McHugh—Colonel Corcoran, Commanding 69th New York (Irish).

The re-enactment of this battle by the trained troops of the two units of the regular service brought forth favorable comment in the press throughout the country. The following editorial appeared in the *Richmond News Leader*, written by Doctor Douglas Southall Freeman, noted historian and biographer.

WITH THANKS TO ALL

Some thousands of Virginians left the Henry House Hill yesterday afternoon with a sense of indebtedness to



Left to right:—Lieut.-Colonel Gilder D. Jackson, Colonel C. J. Miller, Major Donald Curtis, U.S.M.C.

all those who made possible the impressive reenactment of the great battle of July 21, 1861. All details of approach, parking, and departure were handled admirably. With little violence to the historical verities—a foreshortening here and a slight change of front there—it was possible to present clearly to each spectator the rally of the Confederates on Henry Hill, the repulse of the Federal assaults and the final counter-attack.

Congratulations and thanks are due all the local authorities—the Manassas Battlefield Park Association, the U.D.C., The Sons of Veterans, the Manassas Chamber of Commerce, the National Park Service, the Conservation Commission, and the Motor Vehicle Commissioner. In particular is Virginia indebted to the Army for the R.O.T.C., the detachment from the Twelfth Infantry, the batteries of the Sixteenth Field Artillery, and a squadron of the Third Cavalry. These gave a most realistic presentation—even to the muzzle loading of their rifles.

As for the Marine Corps, we Virginians regard our friends at Quantico as home folks in so complete a sense that sometimes, perhaps, we fail to let them realize how

conscious we are of our debt to them.

The Marines are the best of neighbors. From the largest service to the smallest, they are as quick to respond as they are certain to execute. Whether it is a plane to search for a lost party, or a band to grace a State event, or a regiment to fight a sham battle, the Marine Corps unfailingly is kind to Virginia.

Yesterday, as at Chancellorsville last year, the Marines had to play the less popular role of Federals, who lost the battle. That was not pleasant to boys who are recruited, in the main, from Southern States, but it was done with a dash and a realism above all praise.

In addition to the Fifth Regiment, Virginia was honored with the presence of the high command of the Corps.

In the name of all the spectators, we should like to make grateful acknowledgment of the Marines' characteristic discipline and good sportsmanship. We hope Secretary Swanson, as a Virginian, will convey to the senior Major General, to the Commanding General at Quantico, and to the entire participating personnel the thanks of the Commonwealth and its people.

MARINES RETAIN NATIONAL RIFLE TEAM HONORS

■ With a total score of 2830, the U. S. Marine Corps Rifle Team won the National Rifle Team Match at Camp Perry, Ohio, on September 12. Competing with 119 teams, from all parts of the country the Marines retained the trophy which they have held since 1930. This is the fourth consecutive win—a record, and at each stage during the match, the Marines held the high score.

Before firing the last stage of the match, the 1000 yard range, the team was 35 points up on its nearest competitor. At this range, the team scored 930 points and finished the match 48 points up.

The highest individual score was made by Sergeant Raymond D. Chaney, U.S.M.C., who made 292 out of a possible 300.

The final scores were:

Winner: Marine Corps	2830
2nd Infantry	2782
3rd Cavalry	2771
4th Engineers	2766
5th Coast Guard	2766

The Engineers and the Coast Guard finished with a score of 2766, but the Engineers outranked the Coast Guard.

Twenty-seven National Rifle Team Matches have been fired during the period from 1903 to 1936. The New York National Guard won the first three. The remaining 24 matches were won by service teams as follows:

Marine Corps	13
Infantry	7
Navy	2
Engineers	1
Cavalry	1

The Marines won their 13 matches during the period in which the last nineteen National Matches were fired.

From the day the matches opened, the shooting of the members of the Marine squad was OUTSTANDING. The entire Marine Corps is proud of the records made at Camp Perry this year and Major Edson's whole detachment is congratulated upon their victories.

The following is a summary of the victories of the

Marine Corps Team:

WIMBLETON MATCH—

Won by Marine Gunner Henry P. Crowe, USMC. Score—100—19 V's—a record.

Marine also won 4th, 5th, 6th and 7th places, all scoring 100.

THE FARR TROPHY—

Won by Sergeant Edward V. Seeser, USMC.

Score—100—15V's.

Marines also took 2d, 3d, 4th, 5th and 6th places.

THE PRESIDENT'S MATCH—

Won by Corporal Valentine J. Kravitz, USMC.

Score—147 which tied former record made by Gunnery Sergeant John Blakeley, USMC, and E. C. Jones, USCG.

Marines also took 2d, 4th, 5th and 7th places.

SCOTT TROPHY—

Won by Sergeant Claude N. Harris, USMC.

Score—47.

Marines also won 4th and 5th places.

HERRICK TROPHY TEAM MATCH—

Won by Marine Corps Team. Score—1789.

SERVICE PISTOL RAPID FIRE MATCH—

Won by Major Jacob Lienhard, USMC.

Score—190.

Marines also won 4th and 6th places.

WRIGHT MEMORIAL GRAND AGGREGATE MATCH—

Won by Gunnery Sergeant James R. Tucker, USMC.

Score—629.

Marines also took 2d 3d, 4th, 5th, 6th, 8th and 9th places.

INFANTRY MATCH—

Won by Marine Corps Team.

N.R.A. RE-ENTRY PISTOL MATCHES—

Rapid Fire—Won by Major Jacob Lienhard, USMC. Score—285.

Timed Fire—1st Sergeant Melvin T. Huff, USMC, and Sergeant Broox E. Clements, USMC, tied for first place.

NATIONAL INDIVIDUAL RIFLE MATCH—

Won by Corporal Waldo A. Phinney, USMC.
Score—244.

Marines also took 22 places in the *Distinguished Class*, and 5 places in the *Non-Distinguished Class*.

CHAMPIONSHIP REGIMENTAL TEAM MATCH—

Won by 5th Marines, Fleet Marine Force.
Score—570.

NATIONAL RIFLE TEAM MATCH—

Won by Marine Corps Team. Score—2830.

Major R. L. Montague's scoring detachment, 1st Battalion, Fifth Marines, Fleet Marine Force, attracted much favorable attention and praise for the efficient manner in which they conducted their assignments.

The officers and men of the Marine Corps teams ask that the National Rifle Association be extended their sincere appreciation for the very fine treatment they received, and add hearty congratulations upon the smooth way in which the Association representatives conducted the program.

MARINE CORPS PERSONNEL PROBLEM AND THE ONLY SOLUTION

LIEUTENANT COLONEL MELVIN J. MAAS, U.S.M.C.R.

■ Through my past and present connections with the Marine Corps and its Reserve, and the further fact that I am a member of the Committee on Naval Affairs of the House of Representatives, I am afforded unusual knowledge of the requirements of this historic naval force, of its important mission and of its essential value to the Navy. Deep thought, invoked into a long and diligent study, devoted to this subject, brings me to the conclusion that this vital unit of our armed forces has been sadly neglected. Therefore, I have introduced a bill (H. R. 12847) to solve the personnel problem of the Marine Corps and bring that organization up to appropriate strength to permit the fulfillment of its mission.

The Navy has established the Fleet Marine Force as a unit of the Fleet, with Force Headquarters at the Marine Corps Base, Naval Operating Base, San Diego, California. This force is at present organized into two reenforced brigades, one at San Diego and the other at Quantico. The principal mission of the Fleet Marine Force is to give the Fleet a landing force to seize and hold Fleet bases, thus permitting the Fleet to operate securely and effectively at great distances from home bases. Thus, in time of emergency, it becomes the Fleet's business to search the high seas for the enemy fleet, which, as Mahan said, is the Fleet's main objective, as well protecting our own commerce and destroying enemy commerce. The importance of bases to the Fleet is too obvious to warrant further comment on that point.

I further understand that each of these two brigades now has a strength of about 80 officers and 1,500 enlisted men, not including aviation. A reenforced brigade, to be effective, should have around 336 officers and 6,465 enlisted men. Considering that they are each about 250 officers and 5,000 men under strength, one can not, without exaggeration, call the present organizations proper nuclei upon which to build the full strength organization in an emergency.

This Fleet Marine Force, now existent, is well trained and prepared for immediate call to service with the Fleet, though under strength. Being under strength in case of an emergency would have telling effect on the manner in which it could perform its mission in actual service; might even and probably would vitally impair its effectiveness. Normal turnover of personnel can easily be taken care of in an established full strength organization, but in a skeleton organization, the loss of men holding key positions, if not readily re-

placed, can create severe handicaps. All units of the Fleet are required to be ready for instant service and it seems to me that this analogy applies to the Fleet Marine Force.

The First Marine Brigade from Quantico maneuvered with the Training Squadron of the Fleet at Culebra, P. R., last winter. I am told that, although the Commander of the Training Squadron highly commended the Brigade Commander on the condition and efficiency of his organization, he did seriously recommend that its strength be materially increased in order that it could properly fulfill its mission with the Fleet. He considered that this brigade should be strong enough to do its job and thus ready to move out with the Fleet for instant service. The Quantico Brigade had a very successful exercise on this maneuver and, supported by its aviation force, gave excellent account of itself. The deficiency did not rest in the organization but solely in its lack of numbers.

This leads me to another problem facing the Corps—the serious deficiency in aviation. This year about fifty planes, under the command of Colonel Geiger, made a very successful flight from Quantico to Culebra, passing over four bodies of water, and functioned with the Brigade and the Training Squadron in attack and defense problems, in spotting, observation and photography, and returned to Quantico without serious mishap. Altogether, this air force, in addition to the round trip flight, operated five weeks in and about the maneuver area, both by night and day, returning intact. A most notable achievement, a credit to the Marine Corps and to Marine aviation in particular. This demonstrates the value of aviation to the Marine Corps in fulfilling its mission. Marine Corps aviation now has a strength of about 150 officers and approximately 1,000 enlisted men. The present approximate strength of the Marine Corps, including aviation personnel, is 1,074 commissioned officers and 16,500 enlisted men. It is my contention and sincere belief that its aviation strength should be separate from the strength of the Marine Corps, and that Marine Corps aviation should be assigned at this time 200 officers and 1,200 enlisted men, and this number of officers and men should not be disturbed. This would permit aviation in the Corps to expand and develop as should be.

The Marine Corps has personnel on board ships of the Navy—battleships, heavy cruisers and others; Marines are stationed at Navy Yards and Naval Stations within and without the continental limits of the United States, and in China. At practically all of these stations the Marine forces are undermanned. Complaints,

so I understand, are received from Commandants of Navy Yards and Naval Stations, and in justice to the Corps, to the stations and to the men doing the work, their shortages should be made up; additional Marines should be provided for these stations. In Navy Yards and at Naval Stations the Government has large investments in property, buildings, ships, materials, etc., running far into the millions of dollars. Marines guard this property, furnish fire protection, are available to put down riots, disorders and maintain order. They receive incidental training in all military duties and are at all times available to join detachments on shipboard or the Fleet Marine Force. Due to their present long hours and arduous duties, there is little time left for their training. This condition can only be relieved by increasing their numbers. After standing a four-hour watch each 24 hours, walking post in a strictly military manner; carrying rifle or pistol; being always on the alert by night or day, and considering the time involved by guard mount, preparation for guard, taking post and being relieved by another sentry, policing the barracks area, routine daily muster formations, drill, plus remaining on the reservation available for immediate call in case of an emergency; the Marine at a navy yard or naval station is truly hard worked and his pay is well earned. I have not mentioned incidental formations for ceremonies and parades, and to render honors to distinguished visitors. Nor have I mentioned many other minor duties incidental to service at a navy yard or naval station. Solely to bring these detachments up to proper strength, not less than five hundred men are needed in addition to the other requirements of the Corps. Worthy of no minor note too is the fact that Marines are and will continue to be required for the new ships being built or scheduled to be built. Where they are to come from, with all posts and stations now undermanned, is a question yet to be answered.

Summarizing the above, it is apparent that for the two brigades of the Fleet Marine Force, one at Quantico and one at San Diego, about ten thousand additional enlisted men are needed to bring these organizations up to effective strength; that five hundred men are needed to bring the Marine detachments up to strength at all the other posts and stations; and that the Marine Corps aviation should have a separate complement of 1,200 enlisted men, not to be counted against the strength of the Marine Corps, i. e., about 200 more than at present; indicating, in fact, illustrating clearly that there is a shortage of 10,700 enlisted men in the Marine Corps, and 559 commissioned officers. On various occasions I have observed that the Marine Corps Recruiting Service has no difficulty in securing more than enough intelligent, able-bodied, qualified young men to fill the current vacancies in its ranks. Indeed, I have known cases where fully qualified young men of excellent antecedents were denied entrance into the service of the Marine Corps, purely because of the lack of vacancies in its ranks, and were required to place their names on a waiting list to await a vacancy in order to secure enlistment. Then, too, officers can be procured—excellent material—from colleges and universities having R.O.T.C. units and teaching military science, and from the Reserve and from the ranks. The recruiting of the increase in enlisted personnel, the same as the procurement of the additional commissioned officers, could be spread out over a period of more than one year. My bill provides for a three year procure-

MAJOR GENERAL LOGAN FELAND, U.S.M.C.,
RETIRED



18 AUGUST, 1869—17 JULY, 1936

ment plan. Also, it has one other important feature, in that it provides for the employment of worthy Reserve officers on active duty until regular personnel can be obtained. I consider this vital, as it gives the Corps an opportunity to train likely and capable officers of the Reserve.

And so, out of pure sincerity, greater interest in the problems of national defense, and primary patriotism to our Country, to my congressional district and to our Navy and Marine Corps, I have introduced the bill, the substance of which is as follows, as the only logical solution to the personnel problem of the Marine Corps:

"That the commissioned strength of the active list of the United States Marine Corps which shall be maintained is hereby fixed at an aggregate annual average of one thousand six hundred and thirty-three officers, exclusive of chief warrant officers and warrant officers. The increase necessary to reach this strength shall be accomplished in three approximately equal annual increments, but shall be fully obtained by July 1, 1939, and shall thereafter be maintained: *Provided*, That two hundred such officers shall be assigned to aviation duty and shall be carried as additional numbers. The Secretary of Navy is hereby authorized and directed forthwith to recruit the enlisted strength of the Marine Corps to an aggregate annual average of twenty-seven thousand and two hundred enlisted men and to maintain that strength hereafter. The increase necessary to reach this enlisted strength shall be accomplished in three approximately annual increments, but shall be fully obtained by July 1, 1939, and shall thereafter be maintained: *Provided further*, That the distribution in grades of enlisted men will be based on Marine Corps requirements and will be prescribed annually by the President: *And provided further*, That in order to provide temporarily sufficient commissioned personnel for the increased enlisted strength of the Marine Corps the Secretary of the Navy is hereby authorized and directed to order on extended active duty Reserve officers of grades not above that of captain, the use of Reserve officers for this purpose to cease when and as the increments of increase of the commissioned personnel for the Marine Corps are obtained."

EASTERN PLATOON LEADERS' CLASS, 1936, RESERVE

MAJOR WILLIAM T. CLEMENT, U.S.M.C.

■ With the completion of the second year of training of the Platoon Leaders' Class of the Marine Corps Reserve, we can now survey the growth and development of this new Marine Corps system of procurement after its first completed phase of operation, and draw conclusions as to the efficacy of this method of procuring our emergency Platoon Leaders.

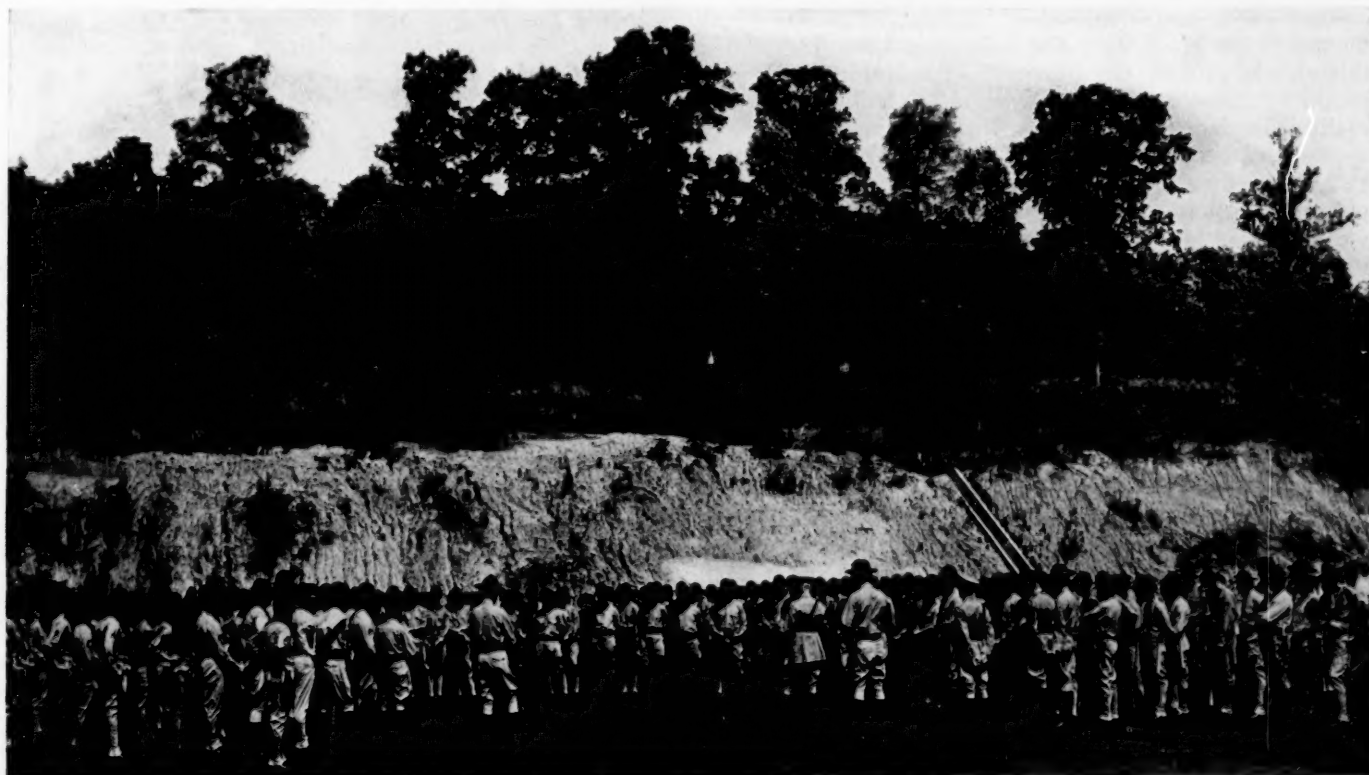
As has been previously announced to the Service, the Platoon Leaders' Class of the Marine Corps Reserve came into existence in 1935, as the result of legislation which recognized the necessity for building up an adequate supply of carefully-selected and well-trained Second Lieutenants, who would become immediately available to the Marine Corps on mobilization. Hundreds of these emergency Platoon Leaders would be required in the event of mobilization for a major war, and, to provide a constant supply from continuing groups of representative Americans, it was planned to procure our needs from among the graduating classes of colleges and universities that do not have R.O.T.C. units. This not only avoids competition with the other services, in which the Marine Corps is at a distinct disadvantage since it is not allotted any R.O.T.C. units, but it also makes the Marine Corps available to schools in all sections of the country and thus insures a far better opportunity for being "truly selective" in the procurement of emergency officers.

To qualify these men for commissions as Reserve Second Lieutenants, twelve weeks of intensive training was

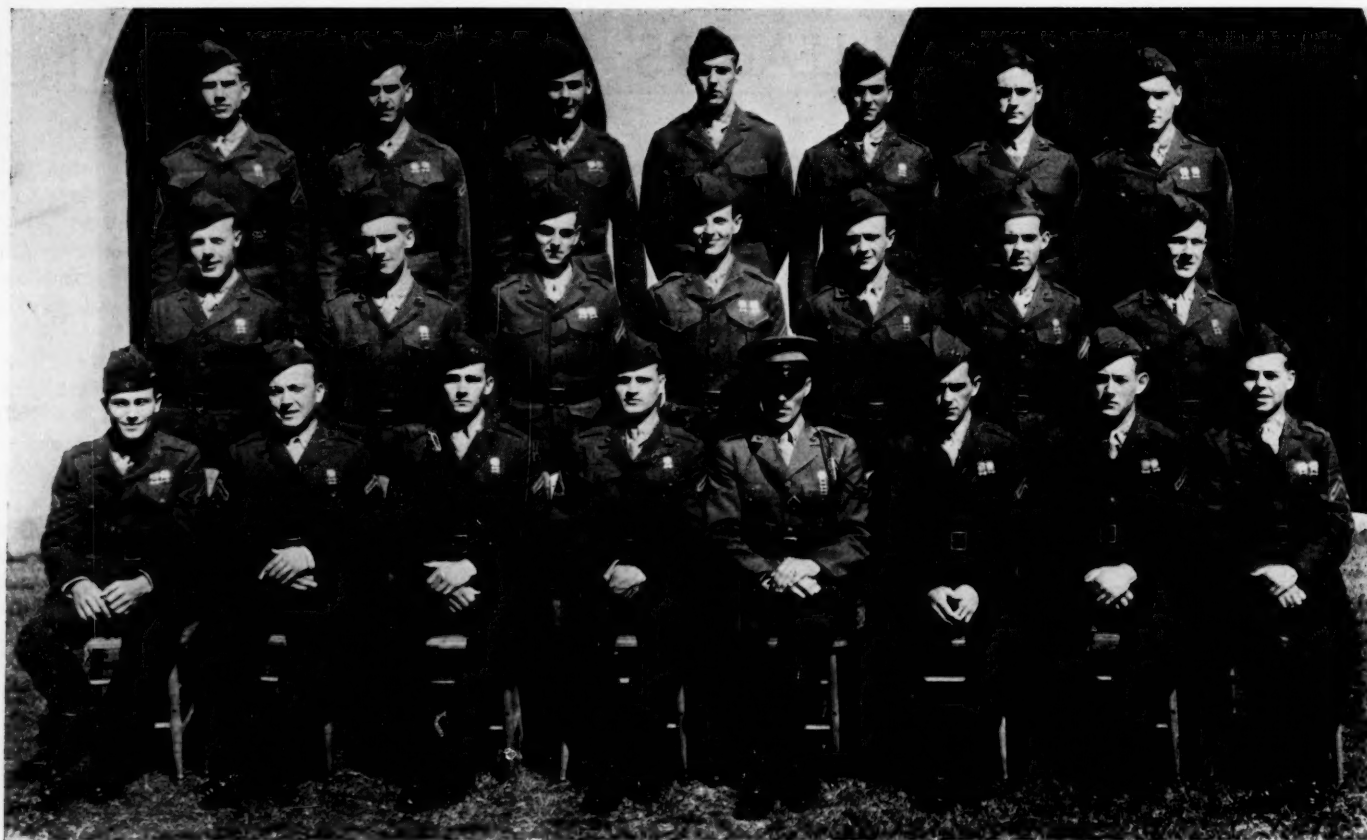
considered necessary, which training must be completed prior to graduation from their respective schools. On completion of this training, and, if recommended as being qualified for appointment, the man's college diploma would be accepted in lieu of a mental examination, and he would be commissioned in the Reserve, if found physically qualified.

The period of training deemed necessary was then broken into two periods of six weeks each, so that they could accomplish this during the candidate's last two summers at college, without depriving him of his entire vacation. Instead of being a hardship, it actually offers the undergraduate a highly profitable method of using a part of his vacation, not only for advancement in the reserve of the service of his choice, but also for his physical development and conditioning at an age when it is of vital importance to the future health of the youth. With this objective in view, there evolved a plan for the training of these prospective Platoon Leaders whereby members of the Sophomore classes were selected for this training by Marine Officers who were sent to the schools on this procurement mission. Selected candidates were enlisted as Privates First Class in the Volunteer Marine Corps Reserve before being ordered to training the following summer.

The training was to be conducted at Quantico and San Diego, with the officers immediately in charge instructed further to select the selectees and weed out those who were not considered promising material. On the completion of the first period of training, those men recommended to return to complete the course, were ordered back



Brigadier General R. P. Williams, U.S.M.C., addressing the Eastern Platoon Leaders' Class, Marine Barracks, Quantico, Va.



Western Platoon Leaders' Class—1936—(Reserve), Marine Corps Base, San Diego, Advanced Class

the following summer for their more advanced and final period of training. Again, they were passed on by a different group of officers and if found qualified, were recommended to be commissioned as Reserve Second Lieutenants upon graduation the following June. In theory, this should provide the Marine Corps Reserve with the cream of our American Universities. Yet, to make it really effective, those officers who are immediately responsible for the selection and training of these youths, should strictly adhere to the highest standards of individual qualifications with each candidate. From the point of view of those in charge of the training of these men, and naturally in closer contact with them, the idea has already been thoroughly accepted by the schools. On this assumption, the Marine Corps can now put it on a highly selective basis and establish definite quota limits for each school, based on the yearly requirement of the Marine Corps Reserve, over a period of time. This would avoid any sudden spurt of class enthusiasm, which is likely to result in accepting candidates who are not quite up to the standards desired. Of the schools represented in the 1936 class, candidates range from one to twenty-four per school, with the outstandingly promising groups of candidates coming from schools represented by from five to ten men. This would indicate either, that the idea has not been as fully accepted by those other schools, or else that greater selectivity was employed.

As an added incentive for the Reserve, as well as a means whereby the Marine Corps can take advantage of any exceptionally promising candidates, commissions as Second Lieutenants in the regular Corps are authorized

for five per cent of the Advanced Class. This provides a real objective for the ambitious undergraduate and brings about the keenest of competition between the outstanding members of the Advanced Class, who, by the way, greatly exceed the number of regular commissions that are authorized. This percentage could be doubled with benefit to the regular service.

The Platoon Leaders' Class of 1935 inaugurated the new plan, and, as it was entirely foreign to our peace time experience, it was to be expected that numerous difficulties would be encountered in connection with the assembling of the class and placing it in efficient operation. However, some two hundred undergraduates from our Eastern schools were assembled at Quantico, and fifty from the Western colleges at San Diego. These classes were about equally divided between Juniors and Seniors, but since they were both receiving their first introduction to military life, it was necessary to follow the same training schedule for both groups. The Seniors, unfortunately, were deprived of their more advanced training which normally would have come the following year.

Even so, the results attained were highly satisfactory, as evidenced by the healthy growth of the class during the first year of its life. Eighty-two of the eighty-eight juniors of last year who were selected to return, reported for their second period of training. However, the significant fact is that, after the first period of training, the plan has been so favorably received on the various campuses, more than twice the number of Sophomores enrolled and reported at Quantico this year than attended the first class. If this is any criterion as to what we may

expect in future years, the Marine Corps' problem of procurement of Reserve Platoon Leaders has been solved, and we can well afford, from now on, to be highly selective in our future appointments.

With the experience of last year as our guide, the Procurement Division at Headquarters, in selecting candidates this year, was more specific in their instructions to the reservists, with the result that the class was organized with a great deal less confusion than was experienced last year.

Straggling was practically eliminated by barring travel by privately owned automobile and requiring all candidates to travel, as routed, by railroad. This controlled their time of arrival, which is a most essential consideration if the task of clothing the men and organizing the companies is not to cut further into the all-too-short period of training. While this was a decided improvement, transportation was not without its complications. Round-trip tickets should not be issued under any conditions, and especially so if several reservists travel in a group. There is no assurance that the group will be intact for the return trip, nor is there any reason why the reservists should not rejoin their families who might be vacationing at points other than the point of origin of the reservist. While intended to save work for the issuing Quartermaster, it actually causes more work for the Quartermaster Department in cancelling the unused return ticket and issuing a new one. It is also grief to the battalion and company officers who must interview each man to determine whether he has a return ticket, or return request, and if so, collect and list the same for safe-keeping.

The Reserve Section at Marine Corps Headquarters provided rosters of those expected well in advance which permitted companies to be organized and men tentatively assigned to squads, according to heights taken from their service record books, prior to the first arrivals on July 6th. In addition to the one advanced company, of three platoons, three junior, or basic companies, two of three platoons and one of two, were formed according to the Reserve District from which recruited. Each platoon consisted of two sections of two squads each, which proved to be an excellent organization for training purposes. In general, this placed the Northern schools in one company, the Southern representatives in another, while the third company embraced those schools in the Central Reserve Area. A total of eighty-two seniors and two hundred and eighteen juniors, from forty-four colleges and universities, reported for training.

Of the numerous schools east of the Mississippi River which were represented at Quantico, Dartmouth, Vanderbilt, Tulane, Notre Dame, University of North Carolina, Ohio University, Washington and Jefferson, University of South Carolina, Colgate, Toledo University, Duke, Columbia, University of Mississippi, and the University of Virginia were especially well represented, each having sent more than a dozen of their students for this training. Other schools represented are Rensselaer Polytechnic, Bucknell, Washington and Lee, Miami, Ohio State, Maryland, Rochester, Northwestern, Purdue, Harvard, Detroit, Emory, Catholic University, Tufts, Amherst, Williams, Ohio Wesleyan, St. Lawrence, Center College of Kentucky, William and Mary, Cornell, Clemson A. and M., La Salle College, Boston College, Roanoke College, Georgia Tech, Mississippi College, Virginia Tech, and Mercer College.

Although a vast improvement was noted as a result of the recommendations from last year, it apparently is

too much to expect all administrative difficulties to be corrected in the short period of one year. Service record books and health records were needlessly incomplete and caused a great loss of time, which is far too valuable during such a short training period. Almost two hundred beneficiary slips had to be made out, requiring five minutes each, or a total of seventeen hours lost. Each Platoon Leader had to be fingerprinted, at a loss of time of three minutes each, totaling fifteen hours. About two hundred dental abstracts were missing from the health records, and in order to examine each man would have required seven minutes, in addition to a mile hike to and from the dental dispensary. The latter, however, was not accomplished. All of these deficiencies should have been taken care of when the man was enlisted.

The training, quite properly, was again to be conducted as an activity of the Marine Corps Schools, and as such, extensive shifts within the Schools' Building were necessary to accommodate the senior company and mess. A battalion organization was formed with the battalion officers drawn from the Staff of the Schools. Company officers were selected from among those ordered to attend the Schools this Fall. Non-commissioned officer instructors were selected and detailed from the First Brigade, Fleet Marine Force, and reported to the Marine Corps Schools prior to the arrival of candidates, so that the entire organization was completed in advance of the day set for the beginning of the training. Non-commissioned officers were assigned on the basis of a First Sergeant and a Property Corporal for each Company Headquarters, a Platoon Sergeant, two Section Sergeants and two Section Corporals for each platoon, on the assumption that a two-squad section, with a sergeant and corporal in charge, would be an ideal unit for the rapid training of these men.

Anticipating a busy day on July 6th, plans were carefully laid for the systematic routing of candidates so that there would be no lost motion in the issue of clothing, reporting and assignment to companies. Non-commissioned officers were detailed to meet all trains and conduct all arrivals to the battalion office to be checked in and immediately sent to companies to which they had been assigned. Here they were assigned to squads, bunks and lockers with their name cards having been previously installed. Details were formed and sent immediately to the clothing-issue room, where the proper fitting of clothing was expected to cause the principal delay of the day. However, with experienced Quartermaster Sergeants to estimate the sizes of clothing required, the standard Marine Corps shoe-fitting machine to determine the proper fit of the shoe, and with officers to check the fit of the clothing so as to allow for the expected development of these youths, this work progressed without a hitch, and by 2300, all reservists were in uniform. Instead of using the Medical Officers to determine the fit of the shoes, reliance was placed in the shoe-fitting machine, to which a half-size was added to take care of the expected spread of the feet of this motor-minded generation, which was sure to occur after a few hours' instruction in the almost-forgotten art of walking. In contrast to the difficulty experienced last year, this method proved entirely satisfactory as no re-issues of shoes were necessary, compared with nine changes experienced in 1935.

Members of the senior company had only to draw

their bundle of clothing, which had been laundered and stored for them since the previous year. However, one year of growth at their ages made a great difference, and it was necessary to have quite an extensive shift of clothing within the company in order to be properly fitted. This would have been impossible had it not been for the excess clothing turned in by last year's senior class, which had been laundered and held for just such uses.

As the 1936 class was the first to receive the complete course of training, much thought was given to the development of a progressive training schedule that would be comprehensive enough to insure well-trained platoon leaders, after receiving a complete course of training. It must contain all subjects that platoon leaders are expected to know, and, in sufficient amounts to insure a thorough understanding and retention of the subject matter when away from military life. Obviously, first year men would require a more elementary program, with additional time devoted to close order drills. Likewise, second year men, after a refresher in the basic subjects, should be given more advanced instruction in combat principles, engineering, topography, musketry and tactics. The guiding thought was to include as much as each class could absorb and retain during the period allotted and at the same time make it progressive to a point where their interest would not lag during the two periods of training. It was equally important to make the seniors realize that they were more advanced than the juniors and that more was to be expected of them.

Accordingly, two programs of training were prepared by the Staff of the Marine Corps Schools and approved by Headquarters, Marine Corps, to cover the desired instruction of the advanced and basic courses of both the Eastern and Western Classes. In the basic course, first year men were to be given two weeks of basic drills, with close order drill predominating, followed by one week of firing on the range, during which the .45 caliber pistol and the .22 caliber rifle were to be fired for record. Second year men should require only one week of basic drills to whip them back into shape. Consequently, the advanced course would use the first week as a refresher course in the basic drills, followed by two weeks of range work, in which the .45 caliber pistol and the .30 caliber rifle were to be fired for record. By this time, the basic class should be sufficiently proficient in close order drill to operate with the advanced class in ceremonies and other training.

In operation, the theoretical program was carried out without much difficulty, and each week's instruction was completed as scheduled. The weather was generally excellent and caused but few changes in the schedule. Training started at 0700 in the morning after arrival and continued until 1600, with a break from 1100 to 1300 for mess. The training week was limited by Marine Corps Headquarters to thirty-five hours, thus allowing Wednesday afternoons and Saturday mornings after 1000 for recreation and educational trips.

Of the two hundred and ten training hours available, in the advanced course, disciplinary subjects claimed forty-six, technical one hundred and twenty-two, and tactical subjects forty-two hours. In the basic course, disciplinary subjects were allotted sixty-eight hours, technical ninety-six, and tactical subjects forty-six hours.

The following training schedule was employed:

	A.C.	B.C.
Total Hours Available	210	210
Disciplinary Subjects	46	68
1. Organization of Class, Physical Inspection, Issue and turn in of Clothing, Equipment and Text Books	13	13
2. Organization and duties of the U. S. Marine Corps. Organization of Units (Co. & Bn.)	$\frac{1}{2}$	$\frac{1}{2}$
3. History of the U. S. Marine Corps	$\frac{1}{2}$	$\frac{1}{2}$
4. Navy Regulations	$\frac{1}{2}$	$\frac{1}{2}$
5. Customs of the Service	$\frac{1}{2}$	$\frac{1}{2}$
6. Drill, Close-order; troop; Manual of arms	15	30
7. Drill, Extended-order	4	8
8. Hygiene and Sanitation	1	1
9. Naval Law	1	1
10. Ceremonies—Guard Mounting, Parades, Reviews and Inspections	9	9
11. Interior Guard Duty	1	1
12. Inoculations		3
Technical Subjects	122	96
13. The Pistol	1	1
14. The Rifle and Bayonet (Bayonet Course)	4	4
15. Infantry Weapons	10	10
16. Grenades	1	2
17. Tent Drill	1	1
Technical Subjects	A.C.	B.C.
18. First Aid	1	1
19. Gas Defense (Use of Gas Mask)	1	1
20. Field Fortifications	6	1
21. Military Topography	12	8
22. Musketry	6	10
23. Marksmanship, Rifle and Pistol	74	50
24. Scouting and Patrolling	3	4
25. Communications	1	1
26. The Pack	1	2
Technical Subjects	42	46
27. Combat Principles—Rifle Platoon	8	
28. Combat Principles—Rifle Company	8	
29. Combat Principles—Infantry Battalion	2	
30. Combat Principles—Rifle Squad		6
31. Combat Principles—Rifle Section		6
32. Combat Principles—Rifle Platoon		10
33. Marches and Camping	7	7
34. Night Operations	4	4
35. Defense Against Aircraft	1	1
36. Landing Operations	5	5
37. Tactical employment of infantry weapons	3	3
38. Small Wars	2	2
39. Communications	2	2

The schedule itself was in an experimental stage, to determine its effectiveness for this training, as well as for use in case of mobilization. Hence, each phase of it was carefully watched to determine whether the subjects were being put to the candidates faster than they could absorb them. As a test on this point, an average of fifty "True or False" questions were printed covering each week's instruction. These were issued to the men at 1000 on Saturday mornings, answered and returned to the platoon commanders before noon. This gave an accurate record of those men who were applying themselves. It further gave a check on the progress of the class as a whole and indicated any company or platoon that had failed to put certain instruction across. Finally, it answered the question as to whether or not the subject matter was being absorbed at the rate that it was being given. The results of these tests for the five weeks covered show an average mark of proficiency for the Advanced Course of 86.5 per cent, and for the Basic Course of 83.9 per cent.

In practical work they were equally as proficient and could hold their own, with credit, against any regular service. The senior company demonstrated conclusively at the first period of drill that they had retained their training from the year before. After fif-

teen minutes of the manual of arms on their company parade ground, they marched to the drill field and proceeded with platoon and company drill in a surprisingly proficient manner. During the last two weeks all members of the senior company were assigned as company and platoon commanders for the junior companies in order to observe them as unit commanders in close order drill. They also acted in these capacities during the final parade for the general officer in charge of the Marine Corps Reserve, Brigadier General R. P. Williams, USMC.

The program covering the range work likewise produced convincing results as to its efficacy. Designed to qualify first year men with the pistol and thoroughly school them with the service rifle, using the .22 caliber rifle for all firing, in half the time allotted second year men to qualify with both the pistol and the .30 caliber rifle, the results were:

.45 cal. pistol—Advanced and Basic Courses	72.6% Qual.
.22 cal. rifle—Junior Companies only	93.3% Qual.
.30 cal. rifle—Advanced Company only	75.3% Qual.

In addition to the above, instructional firing with the BAR, the .30 caliber Browning Machine Gun, the Thompson Sub-machine Gun, and the rifle grenade was conducted during the range period.

The results further disclosed the interesting fact that northern schools excelled with the pistol while the southern ones are superior with the rifle, probably due to more opportunities for hunting in the South. At any rate the results from a military point of view were extremely gratifying when it is considered that the firing was conducted after having only five days to orient themselves in their new military routine and to get the feel of the weapons with which they were to fire.

The results speak for the practicability of the schedule for the training of future Platoon Leader Classes. Of course it must be realized that the members of the class were at an age when they are quick to "bubble over" with enthusiasm in any new undertaking. However, on mobilization we might expect an equal impetus in the form of patriotic enthusiasm, in which case the schedule of training would bring about just as satisfactory results in the short period of time that would be available.

At this point it would be very remiss not to mention the noncommissioned officer instructors detailed from the regular service. They must accomplish results under unusual and difficult conditions if the plan is to be successful. Although the members of the class are reservists on active duty and subject to Navy Regulations they are not in the true sense of the word a part of the service. They are here primarily for the convenience of the Marine Corps and can obtain their discharge promptly if they so desire. To train these men efficiently and indoctrinate them, requires diplomacy and leadership of the first order and it is a source of extreme pride in the Corps to see our regular non-commissioned officers so masterfully fulfill every expectation in this respect. They lived with and trained these college men for six weeks and as the class closes it can truthfully be said that they have won the admiration and respect of all of them, through genuine leadership. Not once did they fail to get prompt and willing response to every assignment ordered and not a single case arose that required disciplinary action or even a corrective warning.

The schedule did not allow any time to lag during

the training day. It was, however, extremely important to provide the opportunity for the profitable employment of Wednesday and Saturday afternoons so as to avoid the monotony of barracks life. Recreational and educational trips were planned for these days, entirely optional. One boat trip was made to Mount Vernon which afforded some two hundred men the opportunity of seeing this historical spot. Two boat trips were made to Indian Head, Maryland, where 120 men had the opportunity of inspecting the U. S. Naval Powder Factory and observing the process of making our service powder. One Saturday was spent in sight-seeing through Washington by truck, with an hour or so allowed for the men to visit any particular points of interest that appealed to them.

Wednesday afternoons were used for plane hops over Washington in which each man was given at least one trip. The entire class was air-minded to the extent that there were always a dozen or more applicants for each vacant seat. They were also intensely interested in the trip through the powder factory, where the employees and guides, who were assigned to conduct groups through the plant, were extremely courteous in answering the numerous questions put to them by these mentally active and inquiring undergraduates.

Instruction was given in swimming, horsemanship, and sailing, each of which had an enthusiastic following. In swimming, 150 men were tested and qualified in accordance with the Navy requirement. In addition, 34 of the best swimmers enrolled in the Senior American Red Cross Life-Saving Course, 19 of whom successfully passed their test and were awarded certificates as Senior Life-Savers. In horsemanship and sailing, those men desiring to take advantage of the opportunity provided, were not only instructed but their proficiency tested before being allowed to take a horse on the trail or a boat from the basin. Tennis, baseball, bridge, and other games rounded out the period of training so that the entire time was used either in military instruction or wholesome recreation.

For social diversion, dances were held at the Officers' Mess at the end of the second and sixth week. These were entirely for, and conducted by, the members of the class. Approximately 100 girls, including the post juniors, were invited from Washington, Annapolis, and Fredericksburg. Both dances were highly successful and served a very necessary purpose in this new plan for the selection of Platoon Leaders.

After six weeks of close contact with and careful observation of the enthusiasm and genuine interest with which the members of the Eastern Platoon Leaders' Class have received this opportunity for their advancement, it is apparent that the idea has already been enthusiastically accepted by our college youths and that the Marine Corps' procurement problem for reserve second lieutenants has consequently been most effectively solved. The type of candidate that attended this year's class restores one's confidence in the college youth of the country, and, with more of these indoctrinated Marines returning to their colleges this year than were returned last year, the problem of recruiting the desired quota should be greatly simplified. This should permit of a greater selectivity in the candidates accepted and thus provide the best material obtainable to start the course. After the two periods of training, under different selection boards, there should remain only superior candidates for the reserve as well as for the regular service.

RESERVE CADETS RECEIVE COMMISSIONS

At an imposing ceremony at Naval Air Station, Pensacola, Florida, July 8, 1936, commissions in the regular Marine Corps were delivered to sixteen young officers by the Commandant of the Naval Air Station, Captain Charles A. Blakely, U. S. Navy. The Staff of the Station, all Squadron Commanders, Cadets and other personnel assembled in the chapel where the ceremony was held. Captain Blakely's address to the newly commissioned Second Lieutenants was as follows:

"Young gentlemen, you are on the threshold of careers as officers of the U. S. Marine Corps. It is the desire of the Major General Commandant—and my pleasure—that I, on this occasion, say a few words of cheer and advice to you.

"You have selected honorable company for your military careers. The records of the Marine Corps for patriotic performance of duty, fidelity, uprightness and heroic achievement is unsurpassed. Its motto is *Semper Fidelis* and, as a member of the naval service, I can assure you that it has not been found wanting in all that its motto implies.

"Entering the Marine Corps as an officer imposes upon you the responsibility of upholding its standards and traditions. I shall not attempt here to define them. That will come to you in due course but I want to impress upon you that as the strength of the chain is determined by its weakest link, so too is the integrity of an organization weakened by its least competent member. You may expect hard work, some measure of disagreeable duty and separation from your homes and friends and you may often conclude that your service is not of value and is unappreciated by your seniors. Let

not this deter you from your full and complete performance of duty. You may at the moment be passing through a critical battle with yourself, so hold steadfast to the best that is in you. To quote from 'The Laws of the Navy,' by Captain Hopwood of the British Navy, 'No man seeth the piston but it driveth the ship none the less.' The strength of an organization, the driving power, lies hidden much as the pistons of the main engines of a ship. Those who know the real situation, however, will no more discount your efforts than will the engineer the workings of the hidden parts of his mighty engine.

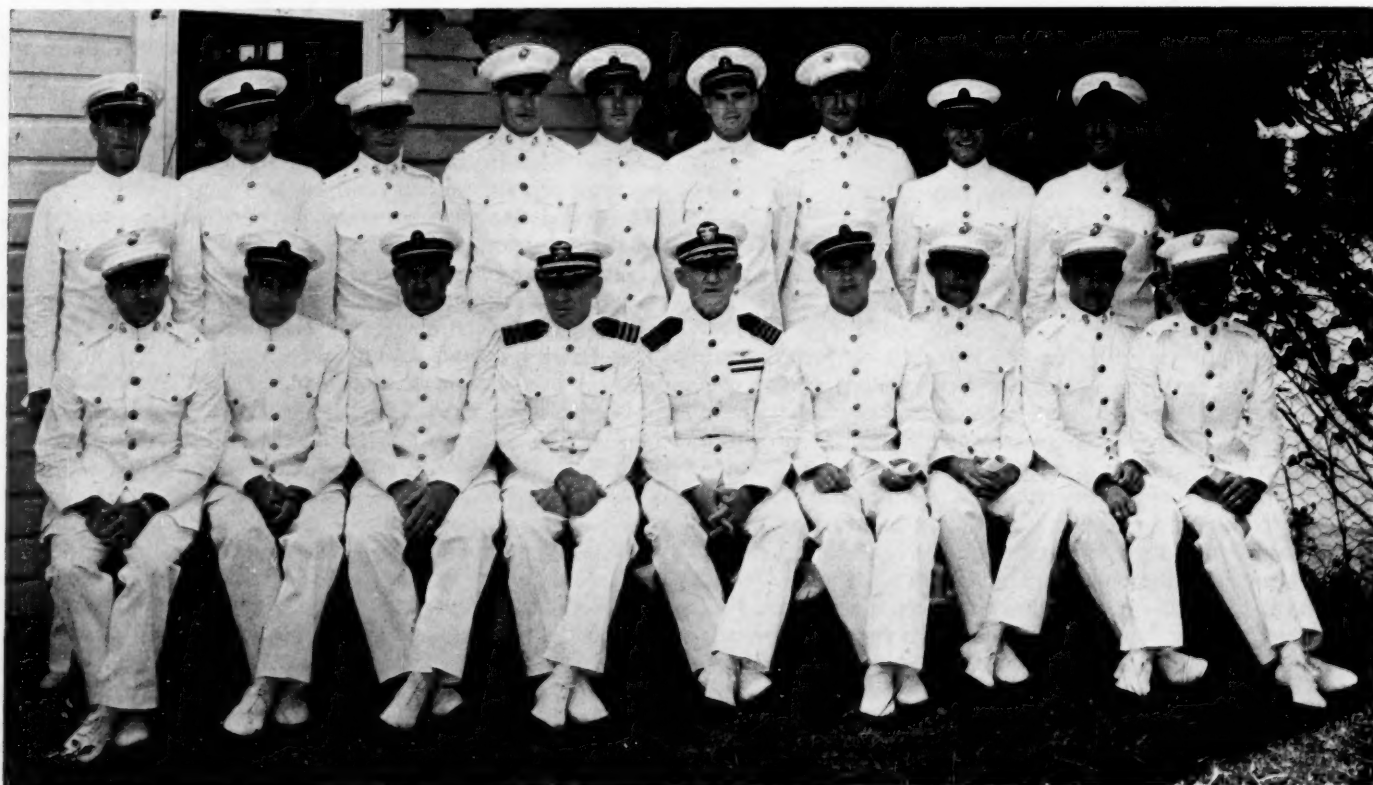
"I hope all of you have read Elbert Hubbard's 'Message to Garcia.' If not, I suggest you read it. The only character depicted in that essay was that of a young Army officer named Rowan, and little did Rowan realize that he was winning enduring fame while in 1898 he was fighting his way through the underbrush of Cuba.

"Loyalty to the best interests of the service, diligent performance of duty, willingness to assume responsibility and the development of a high standard of moral and military character is about the best formula that I can offer for your success.

"Loyalty requires a keen conception of its meaning—its metes and bounds—and the display of that loyalty down as well as up—to those below you as well as to those above.

"Diligence requires self-discipline and hard work.

"The willingness to assume responsibility must be accompanied by the preparation for such a step if success is to be expected. Authority and responsibility go hand in hand.



"In your dealings with enlisted personnel be consistent, fair and impartial. They, too, are human and respond to fair treatment. Win their respect by your own devotion to duty, to the service and to their best interest. Be as prompt to reward a meritorious act on the part of one of your subordinates as you would be to punish an infraction of regulations.

"If you maintain your own self-respect, you will win and maintain the respect of all who know you, because it will require developing in yourselves those virtues that have ennobled mankind. Be temperate in all things. Practice and develop self-control for he who would command others must first learn to command himself.

"Upon the receipt of your commissions, your status at this Station and in the service will be changed. You will cease to be members of the Corps of Aviation Cadets and will join the ranks of the regular commissioned officers. As officers, wearing the uniform of Second Lieutenants of the Marine Corps, you will be met with an increased degree of respect because of that uniform.

Physically, mentally and morally there has been no change. It is well to bear that in mind. Too many young officers, because of their uniform, become vain-glorious and, by their actions, tend to bring disfavor to the uniform they wear. Of course, you will all take a natural pride in it. You will feel that you have achieved a long step on the ladder toward a successful career—and you have. Wear your uniform with pride and let your actions be such that along with the respect that others will have for your uniform will go a like respect for the man who wears it. As I remarked before, you are in honorable company. As a member of the naval profession, my esteem for the Marines is high. They have been our brothers-in-arms. Don't be misled by the old saying once used in derision by the ignorant, 'Tell it to the Marines.' It has achieved a new meaning—'Tell it to the Marines' today is in the nature of advice, for they know the answer.

"I hope for each of you a long, happy and successful career."

VO-9M

CHIEF PAY CLERK C. A. PHILLIPS, U.S.M.C.

■ After 15 years' service in Haiti, Observation Squadron Nine was a tropically seasoned unit especially fitted to establish a Marine air base in the Virgin Islands.

Squadron VO 9M*, since leaving Quantico last August, bears some unusual distinctions. Geographically, the Virgin Islands is the farthestmost eastern possession of the United States. Hence, the Marine Corps unit is the most eastern military spearhead. The Squadron is the only American aviation organization stationed east of the Western Hemisphere. At present, the Virgin Islands provides the only foreign duty for Marine Corps aviators. The Squadron is the only flying unit to bear the responsibility of an independent command. And to add to its unusual situation, since Guam's aviation has been withdrawn, VO 9 is the only flying group in the military or naval forces so stationed that it must operate entirely over water.

Indeed, there is water, water, everywhere.

To the West, when the lead plane and its guardian mate take off for San Juan, there are eighty-four miles of water. The pilot breathes easy on this stretch for in event of motor trouble, from an altitude of 6,000 feet he can hope to glide to the field at the intersecting two by four mile Island of Culebra. Having passed Culebra, his next two-mile a minute span is the stretch to Cape San Juan, some ten minutes; thence to skirt the shore line for twenty minutes to circle and land at the Pan American field at San Juan.

To the south, when the leader and the accompanying plane take off, there are forty-five miles of water. With characteristic abandon, the pilot breathes easy on this

flight, too. He argues, "If there is a forced landing, what of it? We have flotation gear that when gas inflated will float the plane until the Coast Guard Cutter *Marion* or some other rescue ship can reach the scene."

"What about bad weather and heavy seas?"

The pilot's armor of assurance cannot be penetrated. Offhand he answers, "In the Virgin Islands the sun usually shines."

But the rear cockpit passenger, if he be a nervous novice, such as the writer, wonders if his rubber life jacket has any holes in it. Apprehensively, he looks down past the wing to eye the foam crinkled water and tries to recall as to whether the age-old question has ever been settled. "Will a shark attack a foundering man?" "And do the jaws of a barracuda clip off a leg clean, or just tear out a few mouthfuls of flesh?" The wondering goes on, for on the route to St. Croix there is limitless water. Not even in the time of Columbus or when the "Jolly Roger" flew in these parts was there to be spied on this route a speck of land.

The other island of the Virgin group, named Saint John, some ten miles to the East, does not offer a landing field. An occasional flight there presses into service the amphibian transport plane.

These Saint Thomas Marines are truly amphibious. In their fresh khaki uniforms, lined up at King's Wharf to render honors to some United States or foreign officials, these Leathernecks can come to the present and make the rifles snap. On the warming-up line at the flying field, they adjust their flying helmets and take in the slack of the parachute harness with no less facility.

In the early part of last August, the Squadron, back in Quantico from Haiti less than fifteen months, envied the fighters as they corkscrewed daily to practice the breathtaking show to be put on at the forthcoming national air races. VO 9 was afflicted with routine. Then the transformation. In the middle of the month quiet preparations began for the movement Southward of six land planes and

* VO indicates "heavier than air—observation"; 9M indicates ninth Marine organization of its kind.

the one twin-tomored, seven passenger transport amphibian.

The unit was designed to be self-supporting. Included among the twelve officers, there were, in addition to the usual flying personnel, such landlubbers as the doctor, the quartermaster and the paymaster. The sixty-seven enlisted men were all technicians. If you wanted a bit of sewing done you just looked up the parachute man; while if the call was for a spare part for an engine, you went out to the rolling machine-shop and watched the expert machinist at his lathe quickly turn out the vital part. The aerologist could prognosticate the weather as accurately as the pay corporal could vouch that you would be checked twenty cents hospital fund.

On August 27, at the Quantico dock, the rear echelon embarked aboard the U.S.S. *Antares*. On September 5, the *Antares* moored at the dock at San Juan. As soon as the gangway was down, a newsboy came aboard with copies of the Spanish newspaper *El Mundo*. On the front page was an account of the day-old ceremonies attendant with the taking of office at St. Thomas of the newly appointed governor of the Virgin Islands. In his inaugural speech he had announced that Marines were again to be stationed at St. Thomas. Oddly enough, by the means of the Spanish newspaper, the first official announcement of our mission was broadcast.

At San Juan, the *Antares* remained for a few days awaiting the arrival of the seven planes of the Squadron. These were scheduled to wing their way from Quantico to Miami, thence to follow the route of the Pan American Airways, but a hurricane intervened. On the third day news was flashed from Miami that the Squadron had been diverted by the Navy Department to render assistance in the relief work connected with the destruction by the hurricane that swept the Florida Keys. Shortly afterwards, the *Antares* cast off and proceeded to St. Thomas so that the Navy civil engineer aboard

might undertake his mission in the making of plans and estimates for the building of the aviation facilities.

The island of St. Thomas is nine miles long and three wide. Its terrain is generally hilly and covered with short undergrowth, intensely green. Only a bare few inches of soil cover the sub-surface of rock. With few exceptions, little agriculture is carried on. The city of St. Thomas, built on three cone-like hills, flanking the well protected harbor, is a port of commerce. The population is 8,000. The prosperity of the city maintains the Island.

On going ashore, the traveler is puzzled over the heavy storm doors and windows that are a part of every building. On inquiry he learns that these doors and windows, when closed and barred, are designed to keep out the devastating hurricanes. The season ranges from the first of July to the last of October.

With the knowledge in mind that the Islands were under Danish rule for three centuries, the traveler wonders why the natives, the majority of whom are negroes, speak English. The answer is to the effect that while the government was by the Danes, the commerce of St. Thomas and the plantations of the other two islands were largely operated by the English.

Perhaps the third phenomena to be mentioned is that fresh water is to be had only from the source of the rains. As a part of each dwelling, there is usually an underground, rock-walled, or concrete cistern. Leading to this reservoir is a series of rain troughs which the owner has carefully affixed to snare every drop of rain. Last winter and spring a drought threatened. The populace was rationed water from the public cisterns, but the clouds finally formed to overcome the heat and the rainfall since has averaged about one-quarter inch per day.

On landing ashore on that first arrival of the *Antares*, the Marines were told that the new flying field was three



miles from the city. A taxicab scooted out the paved road and the landing field soon came into view. It parallels for a half-mile the until recently known Mosquito Bay, now re-named Lindbergh Bay. Formerly, the landing field area was a mosquito swamp. Under a Public Works project, the U. S. Army dredge *Huston* was towed from San Juan; hooked up its pipelines and gushed coral formation from the bay into the swampland. When the water had drained and the operations were finished, there, ready to be leveled, was a hard packed coral surface.

After arrival at St. Thomas, prefatory routine prevailed on board the *Antares* for only a few days when a radio announced that the planes of the Squadron on the morrow would land at San Juan. With that, the *Antares* weighed anchor and returned to Puerto Rico. The planes arrived without mishap from the Florida relief work, and after a few days' check at the Pan Air hangar, were ready to proceed to St. Thomas. Due to the deteriorating effect of sea water, it was decided not to change the landing wheels for pontoons.

Preceded by the *Antares* and the amphibian, the six planes were flown to St. Thomas and landed on the extemporized, cradle-shaped field: a small uphill golf course. Like Henry Ford's early slogan, "You may have any color paint on your car, *so long as it is black*," so it is with this landing field as regards nosing into the wind. "You may choose to land in any direction, so land as it is due North." Likewise in taking off, "So long as it is due South." Jungle bush and adjoining abrupt mountains decree this choice.

By the latter part of September, the *Antares* had discharged the last of the VO 9 cargo. The Squadron already had dug in ashore. On arrival, it was learned that the buildings occupied by the Naval and Marine Corps forces from 1917 to 1931 had been turned over to the civil government. The civil government gave back the old Marine Barracks Reservation. Even though the buildings were in semi-decay, their accession was vital. Instead of setting up under canvas, we had buildings, even to the two-storied barracks building erected by the Danes in 1874. Insofar as allotments would permit, the Squadron actively set about to repair and repaint the buildings. Unfortunately, the money dwindled before the main structure could be entirely repainted. It is in a poor state by comparison to the out-buildings which were treated to extensive repairs and shiny coats of white paint on the exterior walls, with aluminum to set off resplendently the roofs.

Just prior to the maneuvers last January, the enlisted strength of the Squadron was increased from 67 to 110. This increase bolstered the morale considerably. Guard duty must be performed at three places; at the barracks area, at the flying field and aboard the Douglas plane berthed in the harbor. As the Squadron is the sole federal force ashore in the Virgin Islands, it is necessary to devote periodic hours to become better acquainted with our old friend Marine Corps Order No. 41, and also to maintain infantry training. Too the organization is called upon to render honors when visiting foreign warships are present and on other state occasions. There is little time left in the day for musing about the limited number of American girls.

A few weeks after the *Antares* had cast off to return to Norfolk, the three-thriped civil engineer returned to Washington with his detailed plans and estimates for the aviation facilities. After burning much of the mid-

night oil, he completed his estimates for the project. This cost was to be borne as a Public Works Administration job, under Navy supervision. In the end the sum recommended was considerably reduced.

In January, a civil engineer from the Bureau of Yards and Docks reported with a staff of five civilian assistants, four of whom are engineers. This staff inspect and accept the work for the Navy. A civilian contractor had undertaken the construction work.

A year ago, the filling-in of the mosquito swamp was not intended then to serve a dual purpose. Mosquito eradication as a PWA measure was the single aim. But behold! When the dredged coral material had drained, found its level and settled, there as slick as the Santa Anna dance pavilion, was a three-quarter mile floor, inviting enough for the most. So it happened, a flying field was propagated.

Under present plans, the facilities will include:

- A hangar, with lean-to structures for shops and offices.
- A power house.
- A barrack building.
- A ramp for the hauling up of sea planes.
- A warming-up platform.
- Graded runways; north and south, east and west.
- Catchment areas, concrete; for drainage of rainwater into reservoirs.

On July 1, the project was about fifteen per cent complete and will be finished in early January, 1937.

The Bureau of Yards and Docks, the Navy civil engineer and the contractor, all are constantly called upon to iron out unforeseen difficulties. Increased costs must be offset by corresponding decreases. A sixty-foot length of hangar was clipped at one stroke. Wood was substituted for concrete for the barracks. Nevertheless, the situation *will be met*.

CONGRATULATIONS

■ The Marine Corps Association congratulates:

Major Bertrand T. Fay, U.S.M.C.R., Military Instructor, Christian Brothers' Academy, Albany, New York, upon the excellent annual review and competitive drill held in honor of Colonel James J. Meade, U.S.M.C.—the forty-fifth annual review of that Academy.

Major Harvey L. Miller, U. S. Marine Corps Reserve, upon the fine showing made by the Fifth Battalion, Marine Corps Reserve, during its training camp period.

Major Merritt A. Edson, U.S.M.C., Team Captain, on the splendid records made by the Marine Corps Rifle and Pistol Team at Camp Perry, this year.

This year's class, Basic School, Marine Barracks, Philadelphia, upon one hundred per cent enrollment in the Marine Corps Association.

Major General W. W. Godfrey, C.B., C.M.G., upon having been appointed Adjutant General, Royal Marines.

Lieutenant Colonel Francis T. Evans, U.S.M.C., upon receiving the Distinguished Flying Cross for outstanding service in Naval Aviation.

Major William P. Richards, U.S.M.C., upon making a perfect score while firing the Army pistol qualification course.

The Fifth Marines Rifle and Pistol Team of the First Marine Brigade, Fleet Marine Force, upon winning the Championship Regimental Team Match at the National Matches at Camp Perry, Ohio.

THE COCO PATROL

Operations of a Marine Patrol Along the Coco River in Nicaragua

MERRITT A. EDSON, *Captain U. S. Marine Corps*

FOREWORD

■ During the past six years I have been asked several times to write the story of the Coco Patrol and its experiences along the northern border of Nicaragua in 1928 and 1929. I have given several informal talks on this subject before the Marine Corps Schools. As I am even less of an able author than I am an accomplished speaker, I have approached the idea of committing the story to writing with considerable fear and trepidation. It is one thing to hold the interest of an audience for an hour or so, especially with the aid of pictures flashed upon a screen and by the expedient of answering a few questions; it is quite a different thing to commit the experiences of fourteen months to a sheet of paper; to select the really important things from the unimportant; and to hold the interest of the reader in events which concerned me vitally at the time as a participant but which will undoubtedly prove dull and commonplace to those who have campaigned in Nicaragua, Haiti, Santo Domingo, and other innumerable places that Marines have been.

To tell the real story of the Coco Patrol, I have felt it necessary to begin with those activities ashore of the Marine Detachment, *USS Denver*, which preceded it; to me, they are so inter-related that the story of one is incomplete without the other. This is not an "article." So far as possible, I have tried to avoid any technical discussions within the story itself. In retrospect, reading the records of events, the field messages, the letters which make up the record of the Patrol, I find many sins of commission and of omission. With the knowledge of the country and of the people, which could be gained only by experience, and with those bits of information which came to us days and weeks too late to be of value, there is hardly an act which could not have been modified to our advantage. Such errors will be as apparent to others as they are to me, and I offer no excuses for them. I have simply attempted to chronicle the things which happened to us in such a way that the reader may catch a glimpse of himself under similar conditions some place in the tropics. After all, it was just another task to be accomplished; a task which, with the unfailing and constant support of the Eastern Area Commander, Lieutenant Colonel Harold H. Utley; the assistance of aviation in fair weather or foul; and the spirit of the officers and men who made up the patrol, was simplified and made easy; a task which I believe attained the end for which the patrol was organized.

SECTION I—INTRODUCTION

It was the twenty-sixth of December, 1927. The *USS Denver* was steaming north from Colon to Cape Gracias á Dios at the northeastern tip of Nicaragua. Our Christmas holiday in the Canal Zone had been disrupted by orders to proceed immediately to investigate reports of banditry against an American citizen residing

in Cape Gracias. I had joined the ship at Boston on the last day of November before she sailed for Panama and this was to be my introduction to Nicaragua.

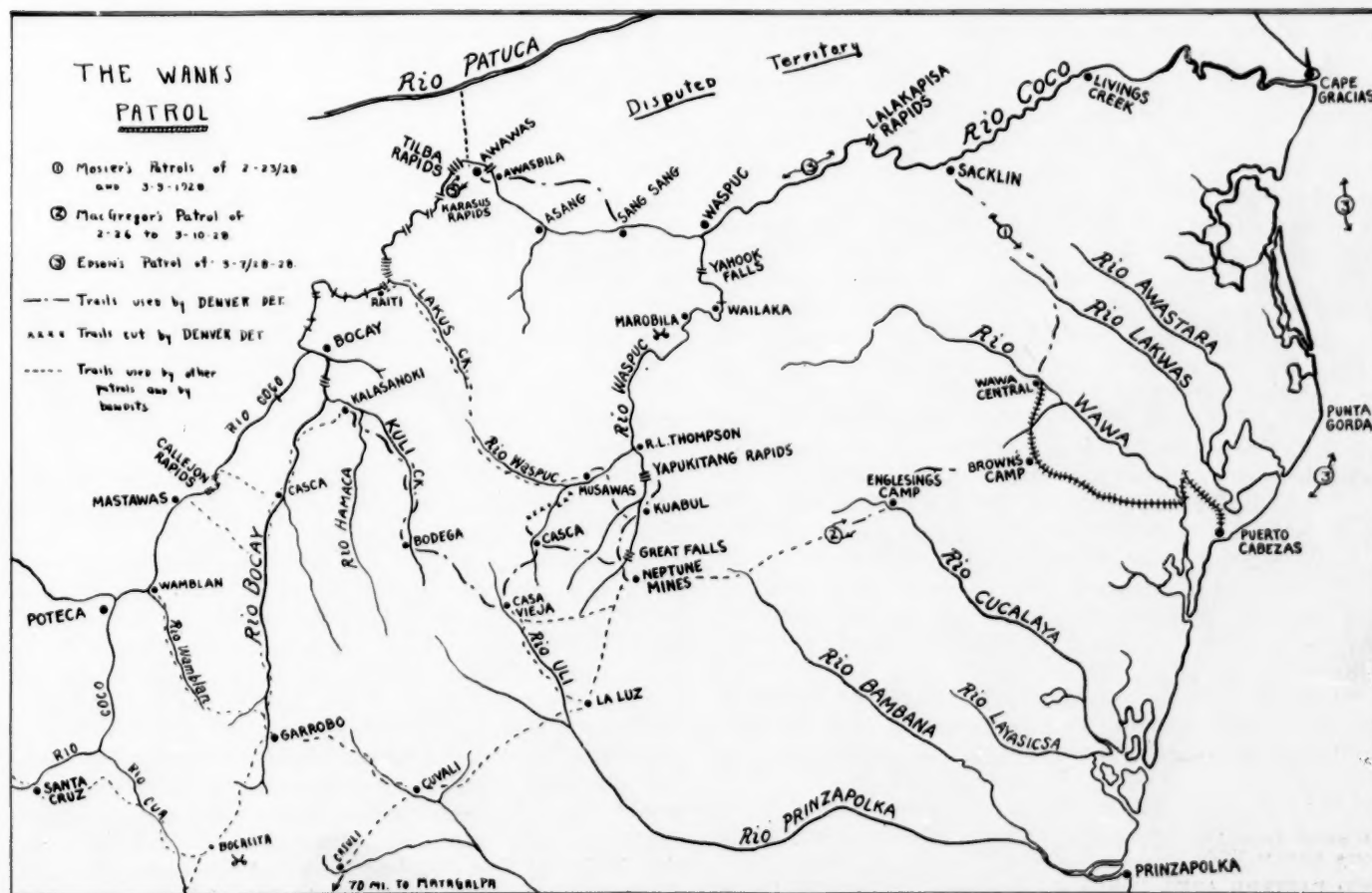
Everyone in the Special Service Squadron was interested in the attempts of the Fifth Marines to combat Sandino's bandit operations in Nueva Segovia. A Christian Brothers' map hung on the bulkhead in the Exec's office and daily we plotted all reported movements of both Marines and bandits and tried to foretell what would happen next. Two things on this map impressed me: the Coco River, its source only a few miles from the Gulf of Fonseca, flowing eastward through all of Segovia and emptying into the Caribbean at Cape Gracias; and Santa Cruz, in the heart of Sandino's territory, labelled as the limit for boat transportation on that river. It seemed to me that here was a feasible supply route for the outlaw forces or, in case our Marines made things too hot for them, an excellent way for them to escape from the country. We had no information about the Coco River or the country through which it flowed. Why not send a reconnaissance patrol upstream from Cape Gracias, using the ship's boats if necessary. Would it not be advisable to garrison the lower river valley to deny it to the bandits? And if the river was in fact navigable to Santa Cruz, why not send a combat patrol from the east coast to operate in conjunction with our forces already in Segovia? Such was the drift of conversation between the ship's officers and myself. Again in January, the same ideas were discussed with Major Harold H. Utley, (now Lieutenant Colonel, Retired) as we carried him north from Colon to assume command of the newly created Eastern Area in Nicaragua. It is doubtful if any of us expected all these things to happen; and yet within two months' time the reconnaissance patrol was a "fait accompli." By the middle of April Marines were garrisoned along the lower river, and July found the Coco Patrol headed for Santa Cruz via Cape Gracias and the river route.

It was my good fortune to command all three of these successive steps which culminated in the advance of the Coco Patrol upstream during the very height of the rainy season to Poteca, a distance of over four hundred river miles, where a permanent base was established from which continual patrolling was carried on to the south and west into bandit territory. During these operations we utilized almost every conceivable mode of transportation; coast-wise schooner; gasoline motor boats and barges; native boats with outboard motors; poling boats, sometimes right side up and almost as often bottom side up; old shank's mare with our food and clothing, if we had any, packed in shoulder rolls; the same old mare with mules to carry the food and clothing roll although the mule in turn had to be carried through the mud or pushed up hill; and finally, by air from Jinotega to the East Coast. Bull carts and automobiles are omitted because such things as bull-cart trails did not exist in the area in which we operated; and automobiles were to northeastern Nicaragua what rocket ships are to us—dreams of the future.

Nicaragua is approximately the size of New York State. Considering the winding courses of the rivers, the boundary between Nicaragua and Honduras is rough-

The Coco is the largest river in Central America. It rises in western Honduras less than fifty miles from the Pacific Ocean, flows east through the province of Nueva Segovia to Santa Cruz and thence north and east to its mouth at Cape Gracias á Dios at the extreme northeastern tip of Nicaragua. The river has a variety of names.

¹THE UNITED STATES AND NICARAGUA; A Survey of the Relations from 1909 to 1932; Dept. of State, Latin American Series No. 6; pp. 109-111.



to the inexperienced boatman. Above Santa Cruz the river rises rapidly through a narrow deep canyon and it is not considered navigable except by small native boats during certain short periods of the year.

Eastern Nicaragua, in which are located ninety per cent of the American investments in the country, is divided into two major geographical divisions, the eastern littoral and the central divide.

The eastern littoral is comparatively level, with open sabanas and some pine and other marketable timber. It is the center of the fruit and lumber industries of the country. It is intersected by innumerable rivers and lagoons, infested with alligators and poisonous snakes, which overflow their banks in the rainy season, making the entire coast an almost impassable swamp. There are no roads and very few trails which may be used in the dry season. Most of the travel in this section is by sailing and motor propelled schooners along the coast and by native cayucos and pitpans along the rivers. There are only two settlements of importance: Bluefields, the east coast political center, and Puerto Cabezas, built and controlled by the American owned Bragman's Bluff Lumber Company, Incorporated, a subsidiary of the Standard Fruit and Steamship Company. Small villages are found at the mouths of each of the larger rivers as at San Juan del Norte, Rio Grande and Cape Gracias á Dios. The population comprises only seven per cent of the total in Nicaragua. It is composed of a few whites, of many Jamaican negroes, and of Rama, Suma and Miskita Indians. English is the commercial language; the native tongue is Indian dialect, with the Miskita predominant. Some Spanish is used in the villages along the coast but is an unknown language to most of the Indians along the lower Coco River.

The central divide is the back-bone of the country. It enters Nicaragua at the western part of Nueva Segovia and runs southeasterly through the departments of Estelí, Matagalpa and Chontales. Extending eastward from this main range of mountains are knife-like ridges which divide the canyons of the large rivers and which taper off into the foothills of the Atlantic littoral. Most of the watershed drains into the Atlantic Ocean. The eastern slope of this divide is a mountainous jungle, covered with a dense growth of hardwoods and tropical underbrush. It is a country rich in gold, mahogany, pine and balsa and is extremely fertile. There are no roads and only a few trails, which must be kept open by constant use else they rapidly become overgrown. Except for the Pis Pis mining area, Bocay, and a few scattered Indian villages, this entire section may be said to be uninhabited. On some maps it is shown as "Montañas Inexploradas." The language of the few people who live there is Indian and Spanish. In going west from the Atlantic seaboard one moves progressively from an all English speaking populace to a combination of English and Miskita dialect; thence to all Indian speaking peoples; then to Indian and Spanish; and finally to an all Spanish speaking population.

There are only two seasons in Nicaragua, the wet and the dry season. In the eastern area one does not find the long dry season which exists in the western part of

the country, for even during this part of the year daily showers are not uncommon. These usually fall in the daytime and the nights are clear and dry. The rainy season begins the latter part of May and lasts until the end of December. It is much more severe than in western Nicaragua with rains every day and an occasional steady downpour of ten days or two weeks or more. The heaviest rainfall is in June and July, with October and November a close second. There are six or eight weeks of comparatively dry weather between these two periods of extreme rainfall. Because so much of the central divide drains into the Caribbean, the effect of the wet season on transportation in the eastern area is even more pronounced than in central or western Nicaragua. Dry ravines become full sized streams over night; an innocent looking stream becomes a wild unruly river; and the rivers, with the accumulation of all the waters of their tributaries, become raging torrents many times their original depth, the swift current sweeping trees and debris before it and making boat travel an impossibility or at best a hazardous thing. They overflow their banks, sometimes cutting new channels, obliterating the few trails of the dry season, and making of the whole coastal plain a veritable swamp.

In the latter part of January, 1928, the 2nd Marine Brigade under command of Major General Logan Feland was organized in Nicaragua with its headquarters at Managua. It consisted of the 5th and 11th Regiments and numerous ships' detachments. The country was divided into three, and later four, military areas. The 5th Regiment was assigned to and occupied the Southern Area around Jinotega, Matagalpa and the lake regions. Its easternmost garrison was at Tuma. The 11th Regiment occupied the Northern Area with its easternmost garrisons along the line Jalapa-San Albino-Quilali. There was no Marine outpost on the Coco River below Telpaneca.

The only Marine Corps organization on the east coast of Nicaragua was the 51st Company, 5th Regiment, stationed at Bluefields, with outposts at Rama, Puerto Cabezas and Wawa Central. On the twenty-first of January, Major Harold H. Utley, arrived at Bluefields and assumed command of the Eastern Area which included "The east coast of Nicaragua and such Nicaraguan territory inland as can be controlled by troops supplied from the east coast of Nicaragua."² It is interesting to note that no western boundary was ever established for this area and that during the year which followed it grew to include approximately two-thirds of the entire country.

The turn of the year found Sandino and his bandit groups concentrated in the vicinity of El Chipote, a high mountain north of Quilali. At this time his force was undoubtedly at the maximum strength ever attained. Following combined operations of aviation and ground units against Chipote during the period of January 14 to 27, the outlaws moved south into the Jinotega-Matagalpa area. Actual contact with the main group of bandits was temporarily lost. Rumors as to Sandino's movements were numerous, one of the most persistent being that he would cross overland to the Pis Pis mining area and Puerto Cabezas where a successful raid would result in much money, food stuffs and merchandise. Reports made to Headquarters, 2nd Brigade, also indicated that Sandino expected to receive supplies through Puerto Cabezas early in March.³

²Combat Operations in Nicaragua; by Div. of O&T; p. 170, Marine Corps Gazette, Vol. XIV, No. 3, Sept., 1929.

³CO EASTERN AREA dispatch 8611 (11 Feb., 28)—1200 to CO PUERTO CABEZAS, Nic.

The *USS Denver* had been lying off the eastern coast of Nicaragua for a month. On the eighteenth of February, 1928, she was at Bluefields ready to get underway for Colon where she was to re-fuel, re-supply and return to station. About two o'clock in the afternoon, a radio dispatch was received directing her to proceed to Puerto Cabezas immediately, there to land her Marine Detachment for the purpose of protecting American lives and property at that place and then to carry out her original schedule. At ten o'clock the following morning she dropped anchor a thousand yards off the end of the pier at Bragman's Bluff. Debarkation of the detachment under my command began at once and was completed at noon. The first step in the story of the Coco Patrol had been taken.

SECTION II—THE WANKS RECONNAISSANCE

The Marine Detachment of the *Denver* consisted of one officer and fifty-seven enlisted men. It was organized and equipped as a war strength platoon of six squads plus a headquarters section of first sergeant, detachment clerk, music and two cooks. One pharmacist's mate and a radioman were attached from the ship's complement. One marine, the ship's mail clerk, was left on board to perform his regular duties. Each man was armed with a rifle except the first sergeant and the trumpeter, who were armed with the automatic pistol, and one man in each squad equipped with the Browning automatic rifle. There were no rifle grenadiers; we had no grenade dischargers nor were rifle or hand grenades available. About half of the detachment had been on board for over a year; the remainder had joined the ship just before she sailed from Boston the preceding December. Non-commissioned officers' school and instruction in such weapons as we had available had been held almost daily. Two Lewis machine guns, 18,000 rounds of caliber .30 ammunition (all M-1906, wartime manufacture), 2,000 rounds of caliber .45 ammunition and rations for fifteen days were landed in addition to tentage, mess equipment, a small amount of clothing replacement, and a small radio set built by the ship's radio crew from salvaged material and installed in a modified field desk. As stated above the *Denver* was under orders to return to the east coast of Nicaragua after refuelling and resupplying at Colon so two weeks' supplies were considered ample nor was it thought advisable to put ashore the sea-bags and complete personal equipment of the men.

The landing, being unopposed, presented no difficulties. It was simply a case of disembarking via the ship's boats to the dock where transportation was arranged to carry both troops and equipment to the selected camp area. The *Denver* sailed for Colon late the afternoon of February 19th; there her orders were modified and she proceeded to Corinto on the west coast of the country. She did not make Puerto Cabezas again until the latter part of April when her Marine Detachment was two hundred miles in the interior and I did not see the ship again until the first of July, 1929, at Balboa.

Puerto Cabezas is the settlement built and maintained by the Bragman's Bluff Lumber Company for its employees and for the conduct of its business. It is built on the promontory from which it gets its name, one of the most healthful and delightful spots in Nicaragua. Facing the water front is a group of about fifty well constructed, screened-in bungalows, modern in every respect, with

running water, bathrooms, showers and electric lights. These were occupied by the foreign colony. Adjacent to this group of buildings were the Standard Foreign Club, tennis courts, a baseball diamond, the company's two-story hospital, a radio station, an hotel for transients and unmarried white employees, the administration building, commissary, ice-plant, power-plant, saw mill, machine shops and other industrial buildings, all owned and operated by the company. A half mile inland were the barracóns for native laborers. To the north and entirely surrounded by the company's holdings was the native village of Bilway. A wooden pier extended eight hundred yards from the shore to a mean depth of over eighteen feet permitting ships of that draft to come alongside. A standard gauge railroad eighty-eight kilometers long served the logging camps and banana farms of the company between Puerto Cabezas and Wawa Central. It was to protect this American investment of several millions of dollars and the foreign colony, mostly Americans, of between three and four hundred men, women and children that the Marine Detachment from the *Denver* was landed.

There was already a detachment of twenty-one men of the 51st Company, 5th Marines, under the command of Lieutenant (now Captain) George W. Shearer at Puerto Cabezas. These men were comfortably housed in a combined squad room, mess-hall and galley, a temporary building of the cantonment type which had been constructed gratuitously by the Bragman's Bluff Lumber Company for their use. It was located on the bluff overlooking the water. A camp site for my detachment was selected adjacent to this building; tents were pitched; galley fires started in our own field ranges; additional sentries were posted; a combined guard roster established; and a defense plan drawn up. The fact of landing was reported by dispatch to the Eastern Area Commander at Bluefields and to the Brigade Commander at Managua.

Prior to our coming ashore and as an inducement for assigning additional forces to that vicinity, Mr. Veitch, resident manager of the company, had promised to furnish any number of buildings required to properly house such troops. Once the landing force was established under canvas ashore and the ship had passed out of sight over the horizon, the tendency was, of course, to think of the current expense account and to regret such open-handed generosity. Conversations were immediately begun with Mr. Veitch and on the afternoon of February twenty-third an agreement was reached whereby the Bragman's Bluff Lumber Company was to furnish us with sufficient material to build a barracks adjacent to and of the same size as that occupied by the 51st Company detachment, the necessary labor to be furnished by my organization. Work was started at six o'clock on the morning of the twenty-fourth. The building was completed and the command moved in on March third. It was not at all a pretentious building. The lumber furnished was pine, of little or no marketable value. Galvanized iron roofing, salvaged from another building, covered all but about twelve feet of one side of the roof, where tar paper roofing was utilized. It was wired for electric lights, the electricity furnished gratis by the company. Wire screening was used not only at the windows but also to cover the numerous knot holes in the siding. The building proved to be waterproof, reasonably mosquito and fly proof, and was a vast improvement over canvas. The galley and mess hall in the building occupied by the 51st Company were enlarged to care for the combined commands.

Our relations with Mr. Veitch, an Englishman of extensive experience in Central and South America, and the personnel under his control were most cordial during his entire stay at Puerto Cabezas as resident manager. He was always willing to assist us. Besides the two barracks buildings, a fully furnished house adjacent thereto was set aside for the use of Captain Shearer and myself. Our hospital corpsman was given access to the company's hospital and an agreement made to care for such men as might require hospitalization. The company's radio was made available for our use outside of their regular scheduled service, resulting in much better communication with the *Denver*, Bluefields and Managua than could possibly have been obtained with our portable radio set. Transportation over the railroad was furnished as required and arrangements made for animals for mounted patrols.

On the morning of February twenty-fourth, Major Utley, accompanied by his entire staff (one music) disembarked from a north bound coastal schooner from Bluefields and established the command post of the Eastern Area at Puerto Cabezas. According to all indications this would be the immediate center of activities of the area.

In the meantime, plans had been perfected for sending two small mounted patrols inland. There was no active organized banditry in the Eastern Area although there were numerous Sandino sympathizers or Sandinistas. Rumors of bandit movements towards Puerto Cabezas by way of the Pis Pis mines or the Coco River persisted. It was considered imperative that information be gained of existing trails and of conditions to the north and west. It was learned that Sandino had transported a shipment of arms for the Liberal Army from Cape Gracias to Jinotega via the Coco River in 1927 so he was entirely familiar with that route and its use for supplying his bandit groups or as a means of escape from Marine forces operating in the vicinity of Chipote seemed probable. A good trail (this was the dry season) was found to exist between Wawa Central, at the terminus of the Bragmano Railroad, and Sacklin, one hundred and ten river miles from the mouth of the Coco. There was also a surveyor's trail, thought to be in good condition, leading west from Puerto Cabezas to the Pis Pis mining area.

A patrol of four men under the command of Sergeant Melvin Mosier cleared Wawa Central for Sacklin on February twenty-third; another patrol of four men under Sergeant Dougald K. MacGregor left Puerto Cabezas in the direction of the Pis Pis mines on February twenty-sixth. Both patrols were mounted; each was armed with three rifles and one Browning Automatic Rifle with the full allowance of ammunition therefor; ten days' rations were carried. Neither patrol had a guide as there were no funds available for such a purpose, but maps furnished by the Bragman's Bluff Lumber Company were carried. The mission assigned was purely reconnaissance: to note the condition of the trails and general type of country traversed; to gain information of known or probable bandit activities or of anything which would be of value in arriving at a decision concerning future actions; and in the case of attack to withdraw immediately to Puerto Cabezas.

Mosier's patrol returned to the main body on the afternoon of the twenty-eighth, having spent three days in the vicinity of Sacklin. He reported a good well-defined trail, mostly over pine ridge, between Wawa Central and that place. His arrival at Sacklin was unexpected and took the natives entirely by surprise, although they already knew of the landing of additional

Marines at Puerto Cabezas. The inhabitants, favorably inclined towards Sandino, were not hostile to our forces. It was learned that occasional malcontents and fugitives from justice had passed through Sacklin on their way up the Coco River to join the bandit forces. There was no known system of supply along the river, although Sandinista agents had recently been to Cape Gracias seeking recruits and levying assessments for the cause. There had been no organized banditry nor was there any evidence that outlaw forces were expected in that sector.

MacGregor's route led through low lying, swampy terrain, over a trail partly overgrown and seldom used. He was forced to turn back before reaching the mining area because of high water, short rations, and no guide, but the information gained was of considerable value when two Marine companies were later ordered inland over this same trail. He rejoined the main body at Puerto Cabezas on March tenth.

In order to gain a more definite knowledge of the Coco River valley and to prepare for possible future operations which would effectively deny it to the bandits, Major Utley ordered a reconnaissance patrol under my command to proceed on March seventh up the river via Cape Gracias to Waspuc and as far beyond that point as appeared advisable to obtain information of the terrain, to learn of such outlaw activities as might exist, and to establish cordial relations with the inhabitants.

The situation confronting the patrol was not a difficult one. Although we had no knowledge of the territory to be traversed after leaving Cape Gracias there were, so far as we knew, no organized bandit forces in that section of Nicaragua and contact with armed forces was not probable. Tentative arrangements for transportation for the patrol had already been made with one William (Kid) Green, an American resident at Cape Gracias, so that final arrangements only would have to be made upon the arrival of the patrol thereat. As the mission was one of reconnaissance only, the patrol was limited to five enlisted men, all from the *Denver* detachment. This was considered ample to provide security without undue fatigue; in case of attack it was deemed strong enough to take care of itself until it could withdraw down river under cover of darkness; and that number of men could be transported comfortably on the boat which was to be furnished. A larger force would require additional supplies, additional transportation, with consequent loss of mobility and there were no compensating advantages.

Armament consisted of four rifles, one Browning automatic rifle and one pistol, with one hundred rounds of ammunition per rifle, two hundred twenty for the automatic rifle and twenty-one for the pistol, all carried on the person. A reserve of twelve hundred rounds of caliber .30 and sixty rounds of caliber .45 was carried with the thirty days' ration supply. Each man carried a roll containing a shelter half, poncho, mosquito net and a complete change of clothing. One man carried a fully equipped first aid kit with the ordinary bandages, disinfectants and medicines. Communication was to be by radio from Cape Gracias and by runner above that point. A patrol of six men under Sergeant Mosier was ordered to proceed overland to Sacklin to establish an outpost for the purpose of receiving and relaying messages between the reconnaissance patrol and Area Headquarters.

Intelligence or quartermaster funds available at Puerto Cabezas were limited. Hire of the boat transportation

and crew at Cape Gracias was effected by the usual government contract and later paid by the area quartermaster. Such money as I might need for emergency purchases, hire of runners, payment for information, etc., had to be advanced out of my personal funds with the hope of future reimbursement. On the advice of local inhabitants, I converted my last monthly pay check into leaf tobacco, bills and silver coin of small denominations and hoped that it would meet all requirements.

Neither the Ham or Christian Brothers maps were suitable for our use. The Bragman's Bluff Lumber Company had in its possession a map of northeastern Nicaragua compiled by the Moravian Missions, blue prints of which were made and used on this patrol. So far as the Coco River valley from Cape Gracias to Awawas was concerned, this map was found to be extremely accurate although serious discrepancies were discovered when later operations took us away from the lower river.

Considerable difficulty was encountered in obtaining a satisfactory guide and interpreter. A native named Dixon, resident of Bilway, was finally hired. Dixon had at one time been a river merchant between Cape Gracias and Sang Sang. His knowledge of the country and its inhabitants was expected to be an asset to the patrol. He spoke Spanish, the Miskita dialect and fairly good English. He was recommended to us by the white inhabitants of Puerto Cabezas and although neither Major Utley nor I were satisfied with the man, there was no other applicant and it was a case of taking him or none.

The patrol left Puerto Cabezas late in the afternoon of March seventh via the Bragmano owned motor launch *North Star*. We dropped anchor off Cape Gracias at two-thirty the following morning and lay to for dawn and high water before crossing the sand bar at the mouth of the Coco. Even then we touched bottom several times but with no ill effects other than a severe shaking up of the boat and its passengers. At six-thirty we docked at the Customs House and began transferring our supplies to Kid Green's motor launch, the *Zambita*, and the accompanying bateau which was lashed alongside her.

The *Zambita* was a flat bottomed craft about sixteen feet long with a beam of five feet or so. It was powered with an engine salvaged from a Model "T" Ford, the propeller shaft and propeller being housed in a tunnel to protect them from the river bottom. Its maximum speed was probably ten knots per hour. The mid-section, containing the motor, wheel, et cetera, was covered with a canopy to protect the pilot from sun and rain, the deck space fore and aft being open. After leaving the tide water, a member of the crew was constantly stationed at the bow, armed with a long pole which he used to take occasional soundings, to fend the bow of the boat away from rocks or sunken snags, and to add his strength to that of the Ford motor when passing

through short rapids where the speed of the current was often equal to that of the *Zambita*. Watching the bowman pilot us up the main channel, avoiding obstacles by inches, picking just the right passage in navigating the rapids, keeping to that part of the river where the craft would make most headway against the current, all by carefully observing the breaks, ripples and speed of the water, was an education in itself and the knowledge gained then was later to prove of inestimable value. To provide room for the patrol of six, the Indian crew of three, and our rations, gasoline and oil, an open boat of the dug-out type was lashed alongside and carried all of our stores.

The settlement of Cape Gracias is built on an island on the north side of the main channel in the Coco delta. With the exception of the stuccoed radio station, all of the buildings are tin-roofed frame structures of one or two stories. The streets are boardwalks and all the houses are built on stilts to keep them above the water which entirely covers the ground during the rainy season. There were not many mosquitoes because of the constant off-shore breeze, but sand fleas were many and vicious. During the early days of the Pis Pis mining operations this village was a thriving metropolis as the point of entry for prospectors and mining supplies. An unknown American erected a pretentious hotel and advertised it widely in the States as a winter resort. He also built a palatial river steamer to make the gold runs to Waspuc. The hotel was burned by a jealous rival and, in 1928, the remains of the steamer were still tied up along the south bank of the river, rotten and broken through years of disuse. Later Cape Gracias became an important shipping point for mahogany, over twenty thousand logs having been loaded there in 1927; the following year, after Sandino had obtained control over the mahogany country, less than eighteen hundred logs were exported. Its chief importance to us was as a re-shipping point for such troops and supplies as we might later decide to send inland and as a source of information of bandit movements through friendly Americans resident thereat.⁴

While our supplies were being transferred to the *Zambita* and her accompanying bateau, I interviewed the more influential of the citizens, most of whom I had met in previous visits while on board the *Denver*: Fagot, an American merchant and owner of the largest fincas at Waspuc, self admitted jefe of the permanent residents; Lopez, a conservative, recently appointed Juez de Mesta for the Comarca of Cape Gracias and chiefly interested at that time in the appointment of local Agente de Policia in the river settlements and in levying and collecting taxes to reimburse him for his six months' exile from civilization; Antonio Salaveri, collector of customs, from whom I learned that Guadalupe Rivera, owner of Santa Cruz, had been a colonel with Sandino during the battle of Quilali (30 December, 1927), that he had then retired from active banditry and was acting as Sandinista agent and informer and that he maintained contact with the lower Coco valley and the east coast by means of his brothers Abram, who was then operating in the vicinity of Cape Gracias and Sacklin armed with letters from Sandino and empowered to enlist recruits and levy funds, and Raphael, who was working for the Bragman's Bluff Lumber Company and was suspected of being an active Sandinista agent on the

(Continued on page 38)

⁴(Special cable to THE NEW YORK TIMES) MANAGUA, Nicaragua, Oct. 27—Cape Gracias a Dios and other smaller towns along the Wanks River have been wiped out by wind and floods. Many have been drowned and there is great suffering among the survivors. At orders of President Juan B. Sacasa help is being rushed from Puerto Cabezas and Bluefields. Probably much of the loss of life at Cape Gracias a Dios resulted from flooding of the flat country. The wireless operator there escaped in a boat after his station was destroyed. It is not known whether the Custom House, close to the river, was destroyed or whether the collector, a Nicaraguan, is safe. There have been heavy rains in Managua as a result of the hurricane on the east coast." (THE NEW YORK TIMES, 27 October, 1935.)

"THE ROUND TABLE"

Hingham, Mass.
April 24, 1936.

THE EDITOR,
THE MARINE CORPS GAZETTE.
DEAR SIR:

I believe that the readers of THE MARINE CORPS GAZETTE may be interested to learn about "The Round Table," which was organized in Boston this past winter. The idea very likely is not new, but I think it is so worthy that I pass it on to all who are interested in National Defense.

A colonel of field artillery asked the writer what he thought of the idea of a group dining together once a month, and freely discussing some military topic on which each member was to prepare himself to speak for about ten minutes. The idea was immediately put into effect. Our first meeting was small—only four attending. At our April meeting there were ten present and one absentee. Our membership of eleven seems to be about the appropriate number, for if there are too many members, time will not permit proper discussion.

In "The Round Table" are seven regular army officers whose ranks are majors to and including colonels, one national guard lieutenant colonel, a captain and a lieutenant of the Marine Corps Reserve, and a civilian who graduated from West Point.

At each meeting the subject for the following meeting is announced. Each member is expected to prepare himself to deliver a talk or to read a paper written by himself upon the given subject. The delivery of such should not exceed ten minutes, for upon its completion all members discuss the matter presented.

I submit two papers read on different evenings at our meetings:

THE PRINCIPLES OF COMBAT ORDERS

Round Table,
Boston, Mass.,
Feb. 21, 1936.

GENTLEMEN:

A combat order is the expression of the will of the commander. The will of the commander should be based upon the Principles of War. Therefore, the order should convey those principles.

I will confine myself to the Principle of the Objective. I consider it to be the most important because it conveys to a subordinate his mission.

It is not merely necessary to be clear and definite in establishing the mission. It is equally important that the order contains nothing which could be construed to conflict with the mission.

It must always be borne in mind that the strain of battle is apt to distort the clearness of thought of a recipient of an order. Too much stress cannot be laid upon the necessity of making combat orders simple in their construction and clear and emphatic in their interpretation.

It will frequently be found necessary to express contingencies that have a bearing upon the accomplishment of the mission. It may also be found necessary to cite secondary missions. If these contingencies and secondary

missions obscure or conflict with the main mission the order is apt to fail in its purpose.

Let us take for example General Lee's order to General Stuart at the time that the Army of Northern Virginia was marching north for the invasion of Pennsylvania. Jeb Stuart and his cavalry was between Upperville and Middleburg, Virginia, when he received the following order:

"June 23, 1863, 5 P. M.

"Major-General J. E. B. Stuart, Commanding Cavalry.
"General:

"Your notes of 9 and 10:30 A. M. today have just been received. As regards the purchase of tobacco for your men, supposing that Confederate money will not be taken, I am willing for commissaries or quartermasters to purchase this tobacco, and let the men get it from them, but I can have nothing seized by the men. If General Hooker's Army remains inactive you can leave two brigades to watch him, and withdraw the three others, but should he not appear to be moving northward, I think you had better withdraw this side of the mountains tomorrow night, cross at Shepherdstown next day, and move over to Fredericktown. You will, however, be able to judge whether you can pass around their army without hindrance, doing them all the damage you can, and cross the river east of the mountains. In either case, after crossing the river, you must move on and feel the right of Ewell's troops, collecting information, provisions, etc. Give instructions to the commander of the brigades left behind to watch the flank and rear of the army, and, in the event of the enemy leaving their front, to retire from the mountains west of the Shenandoah, leaving sufficient pickets to guard the passes, and bring in everything clean along the Valley, closing upon the rear of the Army. As regards the movements of the two brigades of the enemy moving towards Warrenton, the commander of the brigades to be left in the mountains must do what he can to counteract them, but I think the sooner you cross into Maryland after tomorrow the better. The movements of Ewell's Corps are, as stated in my former letter. Hill's First Division will reach the Potomac today and Longstreet will follow tomorrow. Be watchful and circumspect in your movements.

"I am very respectfully and truly yours,

"R. E. LEE, General."

It is not my purpose to criticize the style of the order in comparison with modern orders. I wish to point out that the order did not lay sufficient emphasis on Stuart's mission, which was "to move on and feel the right of Ewell's troops."

Of course Lee wanted his cavalry leader to harass the enemy, obtain information, and to capture whatever provisions possible. However, he did not want this done at the cost of having his army's right flank unprotected in a hostile country. It can be said that this should have been apparent to such a brilliant cavalry leader as General Stuart, and that it was unnecessary for Lee to go any further than the following: "In either case, you must move on and feel the right of Ewell's troops,—." However, it must be remembered that Lee was sufficiently aware of Stuart's propensity to raiding and to fighting

to cause him to end his order with the words: "Be watchful and circumspect in your movements."

It would have been no more superfluous to have ended the order with: "Be watchful and circumspect in your movements, and above all protect the army's right flank by feeling the right of Ewell's troops with as little delay as possible." If the latter part of this sentence had been added, Stuart's mission would have been established without question. It would have emphasized the necessity of contacting Ewell's troops as soon as was possible.

In my humble opinion, I do not consider that General Lee's order, as faulty as it may seem, excused Stuart for his poor tactics. He knew that his cavalry was needed as a screen for its army, yet he permitted himself to be lured away from his mission by the prize of a Union wagon train. The capture of this wagon train was a secondary mission, and if it had been treated as such, Stuart would not have been hindered in reaching Ewell.

On the other hand, Lee's order could have been more emphatic pertaining to the time element of his lieutenant's mission. The reference to hindrance in the order, is that of passing around Hooker's Army. Lee knew that if Stuart accomplished this there would be the likelihood of capturing provisions, and so forth. He should have emphasized the greater importance of pushing on to Ewell over the importance of capturing supplies. I believe if the last sentence of the order had conveyed this thought General Lee would have had his cavalry with him during the first days of Gettysburg.

The Principle of the Objective is found in General Lee's order—none of us can deny it. However, sufficient emphasis was not laid upon the principle to cause a brilliant lieutenant to fulfill his mission.

ARTHUR SNYDER.

The Round Table,
Boston, Mass.,
April 10, 1936.

LEADERSHIP

The subject chosen for discussion this evening is so broad and abstruse as to defy brevity. My contribution will consist merely of a few references, which may include something of value.

Leadership is the art of inspiring others to greater efforts than they could or would make if left to themselves—of arousing in them the noble motive of willing response to the call of duty for duty's sake *alone*.

As in mechanics and economics, so in the more or less indefinite field of human relations every action is followed by an equal reaction. If the expectation of responsibility and loyalty be sown, the acceptance of it will be reaped.

Alexander of Macedon, generally considered to be one of the most impressive figures in history because of his successful campaigns was greater in genius than in character. His span of life was cut short by self indulgence and his death marked the end of his empire, for his generals were soon fighting among themselves for the kingdoms from which his son was forced to flee.

Though in the matter of military genius Napoleon appears to be the most brilliant of Europeans, we cannot forget that he abandoned one army to its fate in Egypt, left the remnant of another in the snows of Russia, and finally strutted into the debacle of Waterloo. His empire

fell about his ears, his Code was torn up, and his son disinherited before his death. Probably no more dynamic personality exists in history for with an energy which seemed utterly exhaustless, he devoted himself to every enterprise. Much maligned by historians, his true character discloses an advocate of equality of privileges, possessing a high sense of honor, religious reverence and a magnanimity toward the vanquished which astonished his enemies. Through his campaigns he shared all the toils and hardships of his men.

But in the thirteenth century there lived a character who by his genius had made himself so utterly the master of his empire, that his son entered upon his heritage without protest, and his grandson ruled half the world. Let us consider, then, some of the attributes of Ghengis Khan who at the age of thirteen began an astonishing career; who, a nomad, a hunter of beasts, outgeneraled the powers of three empires; a barbarian, who had never seen a city and did not know the use of writing drew up a code of laws for fifty peoples.

We need not be concerned here with his ruthlessness in dealing with his enemies, for to him war meant the complete extermination of the opposition. We are searching for the qualities which were responsible for his being named the Perfect Warrior. Loyalty above everything else was demanded of his followers. Complete fairness was law in division of the spoils, and very much in evidence is the willingness to suffer the hardships endured by his men. His officers were chosen because they were discerning as well as daring. Of one, he said, "No man is more valiant, no one has rarer gifts. But as the longest marches do not tire him, as he feels neither hunger nor thirst, he believes that his officers and soldiers do not suffer from these things. That is why he is not fitted for high command. A general should think of hunger and thirst, so he may understand the suffering of those under him, and he should husband the strength of his men and beasts."

At no time did he doubt his own ability to lead and the code which he laid down called for discipline of the highest order. Between periods of combat he kept his men constantly engaged in inspections, drills, and hunts conducted on a grand scale, under full equipment, simulating campaign conditions even to the posting of sentries at night.

He possessed the rare ability to do the right thing at the right time and to hold his men under iron restraint. He was ever on the alert, never allowing hesitation or over-caution to interfere with his enterprises. With the minimum of delay, he would launch his hordes into new conquests. "The merit of action," he told his sons, "is in finishing it to the end." Much can be learned from a study of this genius of organization, strategy, and government.

I shall not dwell upon our own national leaders except to say that in many instances they were God-fearing men. Washington, Lee, and Jackson are outstanding examples for though history and tradition may have amplified their piety, their personal correspondence leaves not the slightest doubt of this strength of character. Without wishing to discourse on religion, I merely suggest that it necessitates but little intelligence to acquire the art of blasphemy, but it requires good old-fashioned guts to invoke the assistance of the Almighty and though the scoffers will be numerous, they will inwardly respect that quality.

In Rear Admiral Byrd we have perhaps the best recent example of a leader. In planning, organizing, recruiting and successfully conducting the operations in the Antarctic, without loss of life under most extraordinary conditions, he demonstrated unusual ability in both the science and the art of command. No better indication of his leadership need be mentioned than the fact that so many of the members of his first unit were ready to follow him again.

Summarizing these remarks, then, we must include among the qualities of a leader

1. Honesty—the basis of all respect.
2. Loyalty toward his task, his superiors, and to subordinates.
3. Courage—moral, mental, physical.
4. Naturalness in manner and in speech.
5. Self respect—"To thine own self be true."
6. Tolerance—the realization that he is dealing with human material.
7. Ambition.
8. Ability to grasp difficult situations and make immediate, accurate decisions.
9. Self-confidence without egotism.
10. Resourcefulness.
11. Thoroughness.
12. Tenacity of purpose.
13. Audacity tempered with reason.

14. The ability to indoctrinate in his followers an esprit de corps so that each individual will play his part toward the accomplishment of the common mission.

15. The capacity to delegate properly and intelligently his authority and responsibility so that his prestige will not suffer thereby.

Many centuries B. C. a Chinese general wrote in his treatise on the Art of War—"Regard your soldiers as your children and they will follow you into the deepest valleys; look upon them as your own beloved sons and they will stand by you even unto death."

FREDERICK A. STEVENS,
U. S. M. A. Class of November 1, 1918,
Commissioned Field Artillery, U. S. A.,
resigned from U. S. A., 1920.

It is obvious that we do not want stereotyped discussion. We enjoy the company of our members, but we do not want the social side to infringe upon serious thoughts pertaining to the profession of arms. We believe that through the free discussion of these thoughts much can be learned to enable us to be better soldiers. It is hoped that groups of individuals throughout the nation will find it profitable and enjoyable to create "Round Tables."

Respectfully yours,
ARTHUR SNYDER,
Captain, U. S. Marine Corps Reserve.

MARINE CORPS RESERVE

1. The following changes have been made in the Marine Corps Reserve since the last issue of the GAZETTE:

APPOINTMENTS

FROM 5 OCTOBER, 1933

Captain James C. Jackman

FROM 9 MAY, 1936

1st Lieut. Hubert C. White
2nd Lieut. Geo. J. Clark
2nd Lieut. Geo. P. Chapman
2nd Lieut. Wm. R. Cory
2nd Lieut. Cary C. Brayton
2nd Lieut. Neal L. Walker

FROM 23 MAY, 1936

2nd Lieut. James W. Simmons
2nd Lieut. William D. Whigham
2nd Lieut. Rodney M. Handley
2nd Lieut. Gene S. Neely

FROM 13 JUNE, 1936

Captain Edward B. Moomau
Captain Leonard J. Denena
2nd Lieut. John J. Waybright

FROM 24 JUNE, 1936

Captain Robert L. Mouton

FROM 29 JUNE, 1936

2nd Lieut. Edmund L. Zonne

FROM 7 JULY, 1936

2nd Lieut. Edward F. Knight

FROM 21 JULY, 1936

1st Lieut. Clifford L. Nelson
2nd Lieut. Charles K. Smithe
2nd Lieut. Charles S. Tracy

FROM 1 JULY, 1936

2nd Lieut. Robert E. Farrell, VMCR.
2nd Lieut. Scott F. Pedley, VMCR.
2nd Lieut. Wilbur F. Meyerhoff, VMCR.
2nd Lieut. Milton J. Green, VMCR.
2nd Lieut. Arthur B. Chason, Jr., VMCR.
2nd Lieut. William O. P. Bracken, VMCR.
2nd Lieut. Andrew H. Rose, Jr., VMCR.
2nd Lieut. James F. Sherman, VMCR.
2nd Lieut. Joseph A. Meyer, VMCR.
2nd Lieut. Alvin K. Bailey, VMCR.
2nd Lieut. Charles A. Sweet, Jr., VMCR.
2nd Lieut. Albert Creal, VMCR.
2nd Lieut. Edward F. Conway, VMCR.
2nd Lieut. Edward J. Horgan, VMCR.
2nd Lieut. John G. Bouker, VMCR.
2nd Lieut. David A. Tripp, VMCR.
2nd Lieut. Edwin B. Brooks, VMCR.
2nd Lieut. Robert L. Burr, VMCR.
2nd Lieut. Ernest P. Foley, VMCR.
2nd Lieut. Richard F. Greeley, VMCR.
2nd Lieut. Samuel M. Graves, Jr., VMCR.

2nd Lieut. John E. Hamilton, VMCR.
 2nd Lieut. Thomas W. Brundage, Jr., VMCR.
 2nd Lieut. Abel R. Gaskill, VMCR.
 2nd Lieut. Felice A. Garcia, VMCR.

PROMOTIONS

FROM 9 MAY, 1936

1st Lieut. Eugene K. Schultz

FROM 21 MAY, 1936

1st Lieut. John B. Jacob

FROM 22 MAY, 1936

Major Edward O. Simmons

Major Clarence H. Baldwin

Major Harold M. Keller

Major Otto Lessing

Major John R. Knowlan

FROM 1 JULY, 1936

Major Wethered Woodworth

FROM 21 MAY, 1936

1st Lieut. John B. Jacob

1st Lieut. Hamilton D. South

1st Lieut. Alvin C. Durning

FROM 22 MAY, 1936

1st Lieut. Wm. R. Lanman

1st Lieut. Stewart W. Ralston

1st Lieut. John T. L. D. Gabbert

1st Lieut. Charles R. Luers

1st Lieut. Clyde T. Mattison

1st Lieut. William H. Grevemeyer

1st Lieut. Wallace T. Scott

1st Lieut. James A. Booth, Jr.

1st Lieut. Henry Van Amringe

1st Lieut. Earl A. Ferguson

1st Lieut. Stuart C. Stetson

1st Lieut. Hugh H. Gordon, 3d.

1st Lieut. Earl E. Holmes

1st Lieut. Robert W. Gallaway

1st Lieut. Patrick J. Haltigan

1st Lieut. John B. LeClaire

1st Lieut. Winston E. Glantz

FROM 25 MAY, 1936

1st Lieut. Ben Z. Redfield

FROM 12 JUNE, 1936

1st Lieut. John V. V. Veeder

FROM 24 JULY, 1936

Captain Donald R. Hyland

Captain Charles H. Cox

FROM 22 MAY, 1936

1st Lieut. Harry R. Van Liew, VMCR (A), No. 1

1st Lieut. Harry H. Bullock, FMCR (A), No. 3

1st Lieut. Kenneth R. Aldrich, FMCR (A), No. 4

1st Lieut. Joseph Sailer, Jr., VMCR (A), No. 5

1st Lieut. Vernon A. Peterson, FMCR (A), No. 6

1st Lieut. John A. Timmons, VMCR (A), No. 7

1st Lieut. Martin A. Severson, FMCR (A), No. 9

1st Lieut. Herbert C. Freuler, FMCR (A), No. 10

1st Lieut. George A. Searles, FMCR (A), No. 11

1st Lieut. Carl W. Nelson, FMCR (A), No. 13

1st Lieut. Nelson Gaunt, FMCR (A), No. 15

1st Lieut. James E. Howarth, Jr., FMCR (A), No. 18

1st Lieut. Eric W. Wood, VMCR (A), No. 19

1st Lieut. Owen C. Ross, FMCR (A), No. 22

1st Lieut. William R. Via, FMCR, No. 23

1st Lieut. John L. Winston, FMCR (A), No. 25

1st Lieut. Joe E. Fretwell, FMCR (A), No. 26

1st Lieut. Reginald L. Brooks, VMCR (A), No. 28

1st Lieut. Charles M. Byrd, VMCR, No. 29

1st Lieut. Franklin Adreon, Jr., FMCR, No. 31

1st Lieut. James A. Hennessy, FMCR, No. 33

1st Lieut. Bradford Swope, VMCR, No. 35

1st Lieut. George A. Brace, VMCR, No. 36

1st Lieut. Robert E. Copes, Jr., FMCR, No. 37

1st Lieut. Charles E. Adams, FMCR (A), No. 41

1st Lieut. James F. Whitney, FMCR, No. 42

1st Lieut. Alexander G. Bunker, FMCR (A), No. 43

1st Lieut. Birney B. Truitt, FMCR (A), No. 44

1st Lieut. Allen F. Van Alstyne, VMCR (A), No. 46

1st Lieut. Jack R. Cram, FMCR (A), No. 48

1st Lieut. Henry C. Lane, FMCR (A), No. 50

1st Lieut. Porter M. Hoidale, FMCR (A), No. 51

1st Lieut. Robert C. Walton, VMCR, No. 54

1st Lieut. Harold W. Truesdale, FMCR (A), No. 55

1st Lieut. Harry J. Zimmer, FMCR, No. 56

1st Lieut. Robert G. Ballance, FMCR, No. 57

1st Lieut. George E. Congdon, FMCR (A), No. 58

1st Lieut. Edmund A. Foss, VMCR, No. 60

1st Lieut. John W. Clark, Jr., FMCR, No. 62

1st Lieut. William J. Burrows, VMCR, No. 63

1st Lieut. Chester J. Salazar, FMCR, No. 64

1st Lieut. William F. Whitaker, FMCR, No. 65

1st Lieut. John F. Elder, FMCR, No. 70

1st Lieut. John W. Preston, Jr., FMCR (A), No. 71

1st Lieut. Melvin M. Johnson, Jr., VMCR, No. 73

1st Lieut. Charles S. Williamson, 3d, VMCR, No. 76

1st Lieut. Cheston V. Mottershead, VMCR, No. 78

FROM 8 JUNE, 1936

1st Lieut. Joyce E. Aldahl, VMCR (A), No. 1

1st Lieut. Samuel P. Crago, FMCR (A), No. 3

RESIGNATIONS

FROM 9 MAY, 1936

2nd Lieut. Paul Pigott

FROM 11 MAY, 1936

2nd Lieut. Walter F. Dearmin

FROM 5 JUNE, 1936

1st Lieut. Dwight L. Harris

FROM 11 JUNE, 1936

1st Lieut. Charles F. Crisp

FROM 8 JULY, 1936

2nd Lieut. Frank L. Davis

FROM 14 JULY, 1936

2nd Lieut. William D. Whigham

FROM 24 AUGUST, 1936

2nd Lieut. Charles H. Jones

FROM 26 AUGUST, 1936

1st Lieut. Boyd E. Phelps

1st Lieut. Edward S. Thompson

DISCHARGED

FROM 10 JUNE, 1936

Major James C. Jackman

FROM 19 JULY, 1936

2nd Lieut. Gene S. Neely

DIED

4 MAY, 1936

2nd Lieut. Ivor R. Edwards

ANTIAIRCRAFT NOTES

MAJOR R. H. PEPPER, U.S.M.C.

■ Notwithstanding recent attempts by European powers to make entire populations "air-attack" conscious, and almost daily exhortations in certain widely read newspapers of the frightfulness of possible future air attacks, much of it pure nonsense, we in the Marine Corps have felt little concern about attacks from the air. In the field, we are a mobile outfit, affording a small and comparatively fleeting target to the heavy bomber even if he felt like dropping an expensive bomb on the mere chance of inflicting a few casualties. As for the light bomber and machine gunner, we have believed, and still believe, that with our small arms and machine guns we can cause him to keep his distance. Therefore, special protection against aircraft has been relegated to a relatively low place on our priority list.

With the responsibility for at least the temporary defense of an advanced base, or an advanced landing field, our antiaircraft problem broadens. Such bases, or advanced landing fields, because of their "fixed" nature, are very vulnerable to attack from the air.

It would now appear, due to the great forward strides being made in aircraft attack, that EVERY Marine officer should give some consideration to the problem of antiaircraft defense, and SOME Marine officers should devote much study to aircraft tactics and antiaircraft defense.

It is not the purpose of this article to discuss the tactics of aircraft attack or of antiaircraft defense; but merely to give a brief description of the antiaircraft weapons, their auxiliary equipment with which we will have to work, and some of the difficulties which we will encounter in working with these weapons and equipment.

The antiaircraft team, basically a battalion organization, consists of 3-inch Antiaircraft Guns, caliber .50 Antiaircraft Machine Guns, Director, Searchlights and Sound Locators, Heightfinder, trucks or tractors, communication equipment, power transmission equipment,

and the power plant, and the personnel necessary to operate weapons and equipment.

Trucks, tractors, communication equipment, and power equipment are standard commercial items and familiar to everyone. They will not be discussed.

Why two types of antiaircraft guns?

The antiaircraft problem may be divided into two major parts: (1) Defense against high-flying aircraft; and (2) Defense against low-flying aircraft.

For defense against high-flying aircraft we will have 3-inch Antiaircraft guns on mobile mounts, using director fire control. The three-inch gun is an excellent weapon. Its high muzzle velocities result in short times of flight. It has a removable liner which can be inserted in the field in about fifteen minutes, and the rate of fire need not be kept down in order to conserve accuracy life of the gun.

The three-inch gun is mounted on a trailer which may be towed at a speed of 35 miles per hour over good roads. It may be emplaced in thirty minutes and returned to the traveling position in less time than thirty minutes. Muzzle velocity is 2,600 foot seconds. Rate of fire is 25 to 30 shots per minute. This high rate of fire is made possible by a full automatic breech block and a specially designed fuze setter. The vertical range is about 25,000 feet. Firing data, elevation, azimuth and fuze setting are transmitted electrically from the fire control station to dials on the gun. There are no sights on the gun.

The fire control equipment for the three-inch gun consists essentially of an automatic computing device, called a director, and a heightfinder. This equipment is necessary because of the complicated nature of the antiaircraft fire control problem. As this problem has been explained in the August, 1935, number of THE MARINE CORPS GAZETTE, it will not be discussed here except to

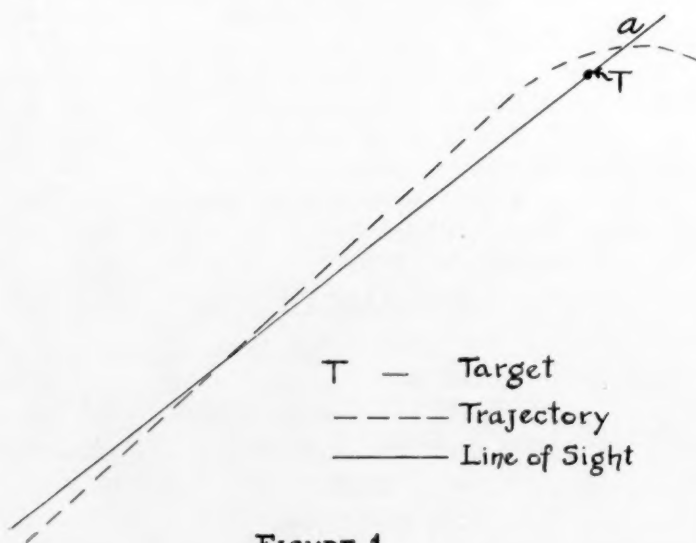


FIGURE 1.

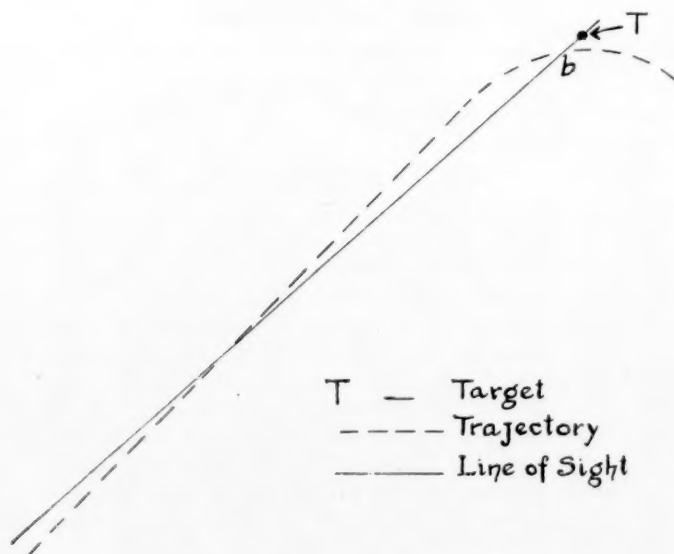


FIGURE 2.

state that ACCURACY and SPEED are the basic elements necessary in solving the fire control problem and delivering fire on the target. We will have all the speed necessary in the type director and data transmission system available to us in the near future. The director will solve and instantaneously transmit to the firing battery the solution as to the future position of the target, and if the target is not hit, it will be because some element of data introduced into the director was incorrect, or else gun crews were inaccurate in matching pointers or slow in loading and firing the gun.

The characteristic of airplanes most annoying to artillerymen is their ability to gather speed by diving from a higher altitude to their attack. The director is provided with means for effective operation against diving airplanes.

We will have the mechanical ACCURACY and SPEED in the director fire control system. But speed in operating the equipment is also necessary. No matter how accurately director and heightfinder crews work, if the gun crew is slow in firing, "dead time" creeps in and misses result. "Dead time" is that interval between the moment at which data observations are taken and the moment the shell leaves the gun. It is the sum of time intervals required for:

- (1) Computation of the ballistic and prediction data.
- (2) The conversion of these data to gun angles.
- (3) The transmission of these gun angles to the guns and fuze setters.
- (4) The setting of guns and fuze setters.
- (5) The loading and firing of the guns.

Zero "dead time" would be the ideal, but since zero "dead time" is not possible the nearest approach to the ideal is what we should strive for by training our gun crews and director crews to the highest possible state of efficiency.

Mechanically, our director fire control system will be the best obtainable. We can be confident that within certain limitations, the inherent limitations of the 3-inch antiaircraft gun, and our own organization, we will be prepared for high-flying aircraft.

One of the necessary elements of data that must be

introduced into the director is altitude of the target. This data is obtained by means of a stereoscopic heightfinder and transmitted electrically to the director. The heightfinder approved by the Equipment Board is complete in every detail and will contain the latest improvements. Highly trained, carefully selected men are necessary to operate this instrument, as the result of the first burst depends mainly upon accurate altitude reading.

In order to deliver continuously pointed antiaircraft fire at night, the target must be illuminated. At the present time illumination by searchlight is the only successful means. Sixty-inch mobile searchlights with metal reflectors will be available to us in the near future. Each searchlight requires a power plant and the necessary power transmission cables. It is directioned electrically by operators stationed at an instrument called a "comparator" who match pointers in train and elevation so that the searchlight points in the same direction and with the same angular height as the sound locator.

A minimum amount of searching of the sky by searchlights is desired, so position finders are required. A perfect position finding system would eliminate any necessity for searching and would permit the searchlights to open up directly on the target. As this is the ideal, and will usually not be accomplished, the system is provided with automatic means for searching within certain narrow limits.

The target locating system utilizes the sound given off by the target to locate the target. This sound is picked up by horns which enable the operators to point the unit in azimuth and elevation toward the sound source. The horns merely aid the operators by collecting more sound than would be collected by the operator's unaided ears. The greater distance between the horns than between the ears of the operators enables more accurate directioning than would be the case without the horns.

Complications enter the directioning problem by the fact that the horns can only be pointed toward the APPARENT sound source. The true sound source may be quite different from the apparent sound source due to wind and other natural forces that make the sound seem to come from one direction when it actually comes from another.



Sound lag effect, or the disparity between the point at which the target emits the sound and the point to which the target has traveled during the time that it takes the sound to reach the sound locator, must also be corrected for.

These complications are corrected either mechanically in the sound locator system or by "spots," and the corrected azimuth and angular height are electrically transmitted to the searchlight through the comparator.

The following requirements for a position finding and target illuminating system, using sound locator and searchlight have been laid down by the Coast Artillery. The system should:

- (1) Determine with the greatest possible accuracy the angular height and azimuth of the apparent source of the sound.
- (2) Determine the effect of sound lag on azimuth and elevation, so that appropriate corrections may be applied.
- (3) Evaluate and apply corrections for the deviating effects on the sound wave of other known causes.
- (4) Determine and apply corrections for parallax at the target, due to distance between searchlight and sound locator.
- (5) Apply the corrections continuously without any loss of time.
- (6) Transmit automatically and continuously to the searchlight the corrected sound locator data.
- (7) Move the searchlight continuously in azimuth and angular height so as to follow the moving point-source of the sound.

It will be noted that the above requirements present quite a large order. In addition, the entire system must be sufficiently rugged to stand up through all weather

conditions and temperatures, and must be capable of being towed or hauled over roads.

After exhaustive tests, a three-horn sound locator has been selected for the Marine Corps. This three-horn unit has the tactical advantage over models now in use of being light and consequently mobile. It will weigh about 500 pounds, complete. Tests have shown that the sound-locating properties have suffered little in reducing the overall size and weight of the instrument. In fact, the light instrument proved superior to heavier instruments in some respects.

The complete searchlight-sound locator unit will consist of two loads, distributed as follows:

LOAD 1	
Searchlight	2,000 lbs.
Control Cable on Reel	176 "
Sound Locator Cable	176 "
Power Cables	968 "
Hand Controller	25 "
Spare Parts	75 "
Ramps	90 "

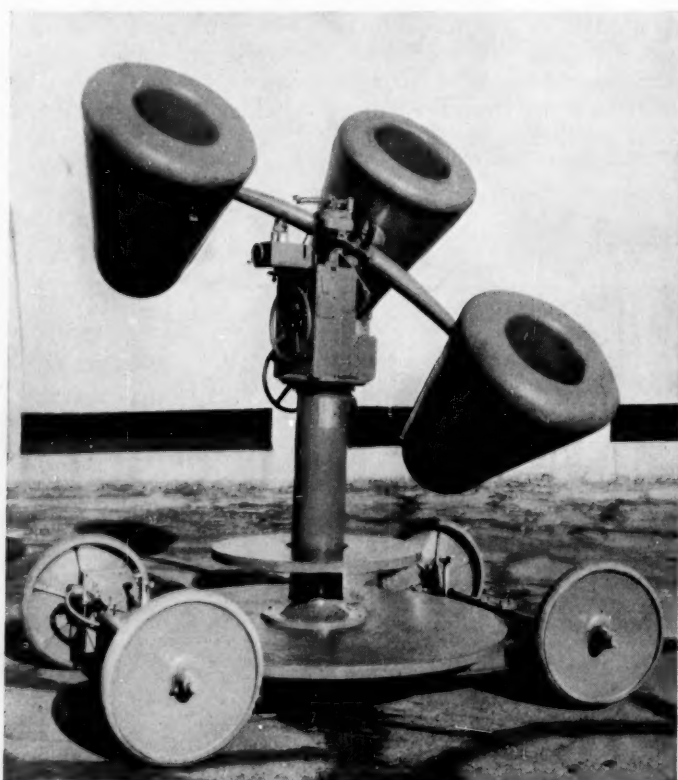
LOAD 2	
Power Unit	2,500 lbs.
Sound Locator	500 "
Control Station	390 "
Ramps	90 "
Convertor	83 "

So much about defense against high-flying aircraft. Defense against low-flying aircraft presents another problem for another type of antiaircraft gun, the caliber .50 Antiaircraft Machine Gun. Obviously we cannot expect to hit with three-inch shells the hedge-hopper who will suddenly appear over the tree tops and as suddenly disappear. A more flexible rapid firing weapon is required. The antiaircraft machine gun, caliber .50, has been designed and developed to offer a ground defense against low-flying aircraft. Its primary target is the light and fast combat airplane engaged in bombardment, gas, smoke, or machine gun missions against ground troops. Its secondary targets are heavy bombardment planes engaged in low altitude bombardment, also observation planes operating at low altitudes.

We can expect machine gun targets to fly, while within range of machine guns, at their maximum speeds and on maneuvering courses. Obviously, fire control methods must be simple, direct, and accurate. Tracer control by the individual gunner is the present method. This method depends wholly upon the judgment and state of training of the individual gunner. It offers a maximum of simplicity; but an accuracy of fire depending upon the judgment and state of training of the gunner. It is far from satisfactory at long ranges, and only fairly accurate at short ranges.

Various types of sights have been experimented with to aid the gunner in estimating the necessary leads. No sight has proven entirely satisfactory. The ordinary gunner is unable to estimate correctly the required leads for medium and long ranges.

Adjustment of fire by the individual by means of observation of tracers is inaccurate due to the tracer characteristics and the three dimensions involved. In firing at an aerial target moving from right to left the tracer trajectory appears to curve sharply to the right; and if



the target is moving from left to right, the tracer trajectory appears to curve to the left. The direction of the curvature is always opposite to the direction in which the target is traveling, on crossing courses. This illusion, caused by the fact that the gunner's attention is focused on the moving target, often deceives the gunner as to the accuracy of the fire. He believes he is striking the target when in reality he is not doing so. The illusion is heightened by the fact that a series of tracers in the air, fired at different azimuths, do present an actual curve.

Let us picture this illusion and fix it in mind. I call it illusion for want of a better word, it is very real to the machine gunner. In Figure 1, the solid line represents the normal line of sight to the target, slightly exaggerated, and the dotted line represents the trajectory of the tracer. When the tracer disappears from the gunner's view, in line with and beyond the target at point "a," the gunner gets the impression that he has hit the target because the tracer burned out just beyond the target.

In Figure 2, line of sight and trajectory are similarly shown, but the cone of fire is behind and below the target. When the tracer reaches point "b," in line with but below the target, the gunner believes that the round has hit the target.

These figures present, graphically, the greatest problem of tracer control by the gunner. The reason for the illusion is lack of stereoscopic acuity, or depth perception, at or near the burnt-out point of the tracer. Since the

ordinary individual loses depth perception at far shorter ranges than the range to the tracer burnt-out point, it is obvious that if this method of control is used, some means must be contrived to aid the gunner in correcting his error in depth perception.

It is safe to say that at the present time there is no solution to the problem of individual control by the machine gunner. Many methods have been tried in the past and will be tried in the future, but the question is still an open one. Recent tests conducted by the Coast Artillery Board paid particular attention to machine gun tracer observation. To overcome the difficulty of controlling machine gun fire from directly behind the guns, a system of tangential observation was used. The observer was given a position on a line tangent to the apparent trajectory. See Figure 3. The observer at "A" is in position for tangential observation on the target course as shown. What actually has happened is that the observer is in such a position that the true angular rate of the target is equal to the true angular rate of the tracer when the bullet reaches the approximate range of the target. The observer so placed at "A" can tell, with reasonable accuracy, when the fire is ahead of, or below, or above, the target. Suppose the observer is placed at "B." The rapid angular movement between the tracer and the target make it impossible for the observer to judge accurately where the bullets are actually going in respect to the moving target unless he has particularly acute stereoscopic vision. For an incoming target, tangential observation can only be had directly behind the guns.

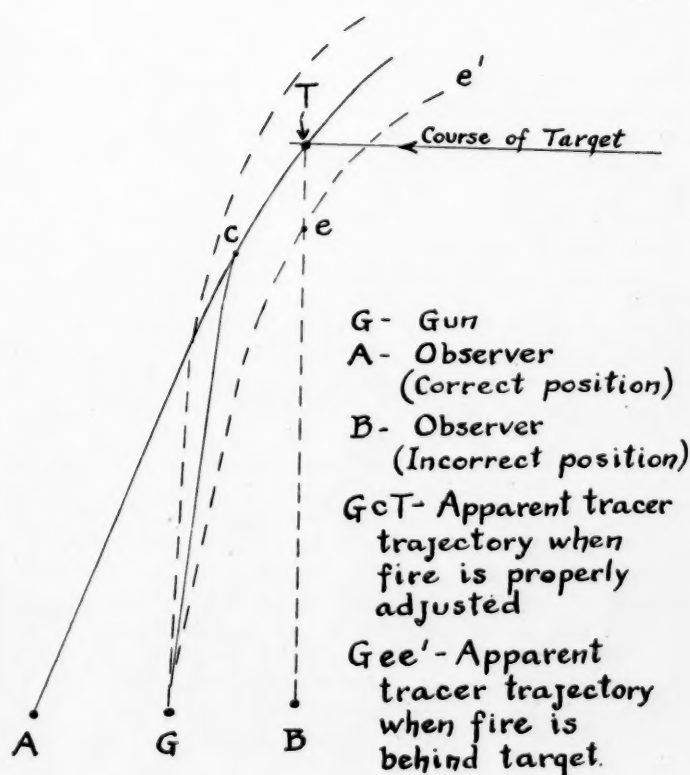
It is readily apparent that the difficulty in using such a method as tangential observation is that observers must be all over the lot. However, it is a step forward, and warrants consideration.

A War Department pamphlet dated August 20, 1934, entitled "Tracer Control—Antiaircraft Machine Guns," presenting a method which uses the number of tracers burning at one time as a yardstick of range in the sky, is recommended to those whose problem it is to contrive means for aiding the antiaircraft machine gunner.

Individual control by observation of the tracer trajectory produces such poor results that it may become necessary to adopt a more centralized control method in which the control is located some little distance from the guns, comparatively free from noise and blast, where the tracer trajectories may be observed and changes in range and azimuth may be transmitted, mechanically, directly to the guns. The gunner would simply be required to aim and fire the gun at some prearranged portion of the target. The point of aim, in so far as concerns the gunner, would not change. The trajectory would be manipulated vertically and horizontally by the individual at the control box. Initial leads could be obtained from a prepared chart containing the leads for various azimuths and elevations, thereafter fire could be adjusted by observation of the tracers according to the judgment of the individual controlling the fire.

Antiaircraft machine gun fire control methods and equipment will be given extensive tests during the current year by the Army. Several devices for fire control will be tested. It behooves us to keep in close touch with any new developments or methods that may improve fire control of antiaircraft machine guns.

FIGURE 3.



A STUDY OF MARINE CORPS INFANTRY WEAPONS

CORPORAL RUSSELL M. CATRON, U.S.M.C.

■ Any comprehensive study of infantry weapons is necessarily quite complex. It is not alone a question of ballistics, range, rapidity of fire, time of day, terrain, training, nature of targets, troops engaged, numbers engaged, ammunition supply, mobility, or the mental state of the troops under fire. It is a composite of all these and more, and there is no true test for any weapon except actual warfare.

From this it would follow that our consideration of the subject must be from the viewpoint of the soldier in battle; not the unruffled, precise competition of rifle range and drill field.

Musketry students seem to be divided into two camps: those who advocate an army of highly trained marksmen, aiming precisely at individual targets and conserving ammunition by firing only when an individual target is seen to shoot at; and those who advocate intense, mass fire at the area in which the actual targets are known (or thought) to be, relying upon the number of hits in the given area to eliminate the opposition.

Of the first method it might be said that it does conserve ammunition, thus increasing mobility and independence of action; and it is quite effective when carried out by the coolest, most accurate and experienced marksmen under ideal conditions of visibility, when trained and equipped with the best of precision rifles and ammunition. However, only a comparatively small percentage of the best regular troops are capable of reaching the necessary proficiency; and the combination of favorable light, still targets, light steady winds, known ranges and clear fields of fire will almost never exist. The opposition may be counted upon to see that such a situation does not exist.

Of the second method, there is much that is favorable to be said. It is effective against undisciplined troops, or when enough full automatic weapons can be brought to bear on a limited area and the ammunition supply is unlimited. In this also, the individual counts for little, the mass for everything. However, machine guns offer good targets for artillery, and the ammunition supply necessary properly to carry out such a policy practically immobilizes the forces employing it. In any case, the beaten area probably will be so great in proportion to number of bullets striking in it, that the fire will be dangerous but not lethal. At close range, where most contests will be decided, rugged terrain, small dispersion, immobility, ease of isolation, and opposition high-angle fire and snipers are apt to be unkind to machine-gun crews and material. Weight of ammunition, dispersion of fire and the slowness of its rate make the individual, rifle-equipped soldier practically useless for this type of operation.

Whereas such mass-minded reasoning might be used when considering the prolonged grappling of two immobile armies, each with a highly efficient corps of supply unimpeded by distance or other factors, we must here consider Marine Corps infantry problems. Most of our operations will be fast, highly mobile affairs of an isolated, G-string variety, where the out-

come will be decided by the individual and his small unit, with what he can carry on his back for a long period, rapidly, over all kinds of adverse impediments, and *what he can do with it* against forces usually numerically superior, familiar with and in possession of the terrain over which he is operating.

Let us, then, examine carefully: first, the end to be accomplished; second, the individuals we must depend upon to do it, with the accompanying personal factors; third, the instruments they must use to overcome the opposition and obstacles confronting them; and fourth, the way they should be trained, classified, equipped, and apportioned into units in order to accomplish their mission.

We wish—to win. This sounds simple and may be accomplished in many ways, such as by the maneuvers and plays of strategy and tactics; but here we are concerned with only one thing. No matter what the conditions of light, weather, preparation, or the disposition and morale of the opposition may be, we wish to defeat him physically and imbue a very real fear of our arms in his survivors. In other words, no matter what the conditions attendant, we here wish to beat the opposition physically in this place and keep him beaten.

This might be done in some cases by intense concentration of fire upon his position as noted above, provided his troops were of a panicky type, with little or no discipline. At one time the British found rockets helpful; and the Chinese have used firecrackers to a good advantage. Then again we might find the opposition to be staunch and resolute, in which case we would have succeeded chiefly in informing him of our position, disposition, and intent, and making him extremely careful and correspondingly vengeful.

Killing and maiming are the only sure ways of accomplishing our purpose. Outside of cheap fiction and a much touted fable of fearless invincibility attributed to certain Asiatic troops, no soldiers in the world will support more than about so much killing. When a certain percentage of the effectives engaged become hideous casualties, the survivors lose all zest for further blood-letting, and are overcome by a mad desire to occupy regions more kindly disposed to their welfare. This certain percentage, other factors being equal, depends entirely on their morale, training, and discipline,—their ability to "take it." It is unnatural to invite death. Nature gave each individual one body, with two legs and a rabid fear of death to preserve it when other means fail. In times of great danger, very few are cool and self-possessed. Nearly all human minds become blanks in which automatic habits, conditioned by long training, grapple for supremacy with the instinctive fear and horror of death. When the combatant sees comrades about him, engaged as he is, killed and maimed until he is convinced that if he proceeds as he is doing there is no survival for him, and the natural horror becomes paramount, the saturation point has been reached. He is thoroughly beaten, and he will run, surrender, or whatever else in his panic might appear likely to save his life.

Then it follows that the successful contestant must

inflict the maximum lethal punishment upon his opponent, while sustaining the minimum casualties among his own forces, lest they also exhibit a mounting disposition to let well enough strictly alone. Certainly the answer is not to sacrifice men in groups behind machine guns; nor should they be left protected only by highly specialized precision rifles in the hands of those who are totally unfitted to use them, under conditions of darkness or other obscured vision. That is, machine-gunners and average, individual riflemen are not the means we seek.

The target most difficult for the opposition to locate, and when located, to hit, and when hit, the most barren of results is the isolated soldier. If we provide this soldier with a weapon for protecting himself in the only effective manner—that of killing all opposition near enough to damage him, whether he is acting alone or in conjunction with other like individuals outside his “bursting radius,”—no matter what circumstances or conditions he might find himself in, we have the answer sought.

At this point a well known fact should be recognized and properly disposed of. Our wars are not fought by professional troops. Instead, they are carried on by raw, more or less untrained and undisciplined levies who know little and care little about their equipment and the job they are doing. However, in consideration of the foregoing, it will be noted that the chief difference between these men and professionals is one of degree rather than kind. Moreover, all statements that are so fundamentally true of the professional on whom we are here basing our findings, are in proportionate degree correspondingly true of militia.

The present system of training the Marine Corps infantry of the line is well known, but let us observe more closely certain factors and their bearing upon the ultimate success with the weapons issued.

Targets of exact, known size are exposed at predetermined times, at known ranges, under the best available light, and carefully tabulated wind conditions, in predetermined, numbered locations, with black bull's eyes in the exact center of light tan baffles, and fired at by individuals who have had time and the best of professional assistance in preparation, from a raised, smoothed firing line under the most encouraging and serene conditions we can create for them, with the best precision instrument and ammunition we can afford.

This is as near an exact, precision game as human inventiveness can make it; but we are supposed to be training the soldier for a game in which his very life and our success are the stakes, and in which practically not one of the foregoing conditions will ever exist, much less such a combination of them, when the turn is called.

No matter how much training be given, only a small percentage of the company is sufficiently methodical and precision-minded to qualify as expert riflemen. Notwithstanding, all the rest of the company are equipped with rifles which they have consistently and decisively proved their inability to employ advantageously under the most favorable circumstances.

Then we usually take some of those experts and burden them with a heavy, automatic rifle whose chief characteristics are outlined by the nature of its design. The slamming of a heavy interior mechanism just prior to the ignition of the cartridge effectually pre-

vents its use as a precision instrument, and lack of rigid mounting renders it valueless as an automatic fire weapon. The chatter of its fire has frightened many people,—and weighted many more with precious ammunition.

Now we take our soldier so trained and equipped, thrust him into a position where his very life is in continual and dire threat of being blasted out of him, where he sees that very thing happening to his friends, where in all probability nothing is left of his ragged nerves but the remnant of automatic obedience to orders and habit patterns conditioned by long repetition of working his bolt and pulling the trigger. He is scarcely the one to use a precision instrument where the deviation of a few thousandths of an inch spells complete failure.

Probably he has been taught to deliver cross fire to his flanks, thus eliminating fire lanes, and to a marked degree, defilades; in theory, at least, presenting a vertical wall lacking doors to the opposition's advance. However, let us remember his mental state. At such times it is not natural to think reasonably or to fire at a target threatening another. It is in the nature of things to pump lead wildly in the direction that seems to threaten him personally the most and closest; that is, dead ahead.

The modern, precision, high-powered rifle has certain advantages and disadvantages that should not be overlooked. It is characterized by the fact that it fires one bullet at a time, in one definite direction, with considerable range and corresponding flatness of trajectory. For those few, cool, precision-minded persons mentioned before, this is an effective weapon, its lethal range depending upon accompanying factors of visibility. But for the rest, many will be found, in their excitement, to jerk their shots almost at their own feet, while others far over-shoot any possible target. This produces a beaten or danger zone bordered by point blank at close range to almost the extreme range of the rifle at its further edge. So is formed a pear-shaped danger area, thinning out near the edges, with the firing line which is producing it facing it at the stem end. To find how little danger there is in this area we need only compute the total acreage, then divide into it the number of shots the soldiers (who should be thirty feet apart) can carry and deliver.

A lethal area is one in which the opposition cannot live, as distinguished from a danger area. Due to the characteristics of the rifle, as outlined above, it will be readily seen that the lethal zone created by it upon the instant of firing is only as wide as the target, and exists only where the flight of the ball is below the top of the target and above the bottom. This is important, for now we see how accurate must be the fire at any range greater than twenty-five or thirty yards; and how wide are the fire lanes or safe areas extending between the combatants, even with good visibility. Twenty-five yards with clear visibility is selected as the lethal range of the rifle, as at that range the panicky soldier may point his rifle quickly, pull the trigger, and be relatively sure of hitting his target (a man standing). Now it will be seen that the lethal area varies considerably with the visibility, whether the latter be conditioned by fog, smoke, brush, darkness, or other factors.

Hence, the danger area of the rifle is thinly spread, large, constant, and little more than an annoyance to

the opposition. The lethal area is short and variable from point blank to twenty-eight yards (as an arbitrary figure), conditioned entirely by visibility. As an individual precision instrument, easily transported with its ammunition, the rifle probably is the best weapon for the small percentage who have proved their ability to use it. What can we do for the rest of the troops? From the foregoing it appears that the bulk of our troops are inadequately equipped to cope with the opposition at the most critical range; that is, twenty-five to one hundred yards in front of their rifle muzzles.

The answer seems close at hand and obvious. When any farmer walks into his fields to shoot a racing, bobbing rabbit or a flying bird, he takes a shotgun. His targets appear without warning, disappear rapidly by swift movement in unpredetermined directions; but he knocks them over. Remember also that he has had no great amount of expensive training. He is only using a non-precision instrument for a non-precision job.

In the wild scramble for longer range and greater penetration, the military shotgun seems to have been overlooked. We need not here be concerned with international law, whatever that has turned out to be, as killers always have used and always will use whatever they need to win. The sporting gun as limited by local laws could be modified usefully; but a purely military shotgun, with the exact performance we wish built into it, would be the ideal equipment for the bulk of the troops who are fitted by nature for just such a non-precision weapon, and no other, to meet a situation that, except for minor long range incidents, is strictly in the non-precision class.

Let us first determine the kind of gun and ammunition we should have, and then place it under exactly the same careful analysis we did the rifle.

In the first place, we do not wish a gun that will hold a deadly pattern at a range of over one hundred yards. Then we would be getting into the field of the precision rifle and machine gun barrage and high-angle fire. So, our gun should pattern twelve 00 buckshot in a forty inch circle, at one hundred yards. If the well known Browning automatic shotgun action could not be made rugged enough to take the necessary heavy charge of progressive powder, we could easily build a Mauser action, modeled on the present service rifle. It should be no heavier than the present rifle, its magazine extending to the end of the barrel which would carry a compensator to reduce the heavy recoil and pattern, and a bayonet stud. It should be a twelve gauge.

The danger zone would extend only about one quarter of a mile from the firing line as against three miles for the rifle; roughly one-sixth of the rifle's danger zone. Multiply this by twelve (the number of balls per round fired) and we have a zone just seventy-two times as dangerous to the opposition, right where we want it, close ahead of our lines.

The width or height of the lethal zone of our shotgun varies from the width of the target at point blank to the width of the pattern at one hundred yards. Whereas our riflemen must aim directly at his target at all ranges, our gunman will score although he discharges his gun when his sights are off the edge of the target nearly one-half the width of the pattern at the range of the target. Hence, as the lethal possibilities of the rifle decrease in that critical area from twenty-five to one hundred yards range, those of the gun increase proportionately.

Now if we apply the same arbitrary yard stick to our gun that we did to the rifle, and employ common arithmetic, we find that the shotgun has an absolute lethal area and range roughly twice that of the rifle. Conditions of visibility do not affect the proportion.

Added to this, our rifle must be equipped with precision sights, slow and difficult of alignment, useless in weak light; while our shotgun has rapidly and easily aligned sights, effective as long as there is sufficient light to outline the target.

We know that our present rifle's bullet carries a "terrific wallop," and its penetration is all that could be desired. However, it may, and in actual practice often does, pass completely through the target without fatal or even disabling results, so greatly desired when the opposition is at close quarters with assassination in his heart.

This definite lack of results for the power expended is due to the essential nature of the high velocity, precision rifle ball in shape and flight. The actual efficiency of any death-dealing missile is measured, not by the initial energy or the residual energy at the moment of contacting its target, but by the amount of energy it communicates to the object struck.

Since the areodynamic properties of a round ball in flight make of it the only ideal bullet for all killing except certain large, thick-skinned beasts of Asia and Africa, where great penetration is essential, we naturally assume that one buckshot would have a shattering, lethal effect far in excess of one rifle bullet although moving at much greater velocity, within the range of both.

In actual practice, this is exactly what happens. Any Michigan backwoods deer hunter will laugh at your high velocity, full jacketed bullet. There his target is hard to stop and disappears like a flash into the jack pines. Something is needed to anchor that target instantly, and buckshot is the only thing that will do it.

There is still the occasional distant target and harassing fire to be accounted for, the first requiring precision rifle and the second precision machine gun fire. But we have the solution of these already: the expert rifleman, and the machine gun company. In the Marine Corps we have another class of shooter whose combat possibilities seem to have been overlooked. That is the distinguished rifleman.

Let us place in this class all riflemen who shoot consistently above the score of three hundred and thirty on the present qualification course. It will be found that nearly all of these are, or will be in war time, non-commissioned officers. Thus their duty will be to direct others in combat, and the lethal possibilities of their talents will be practically lost to the organization.

Suppose we were to train, classify, equip, and assign each individual according to his qualifications, rather than try to combat the nature of things. Then we would have something in the following order:

All distinguished riflemen as defined above to receive specialized sniper's equipment such as telescopes, long-barrelled rifles with telescopic sights and set triggers. They would be trained to isolate, estimate the range to, and register on, indistinct, silhouette targets, appearing and disappearing at unknown ranges. They would be placed in a regimental snipers company, to be at the disposal of the regimental commander. It would be well to award such people spe-

cialists' pay as an added incentive to reach the necessary proficiency to qualify.

Expert riflemen, those making a score between the figures of three hundred ten and three hundred and thirty to receive expert pay, to be equipped with the service rifle as at present, to be trained as convenient on indistinct, surprise silhouettes at unknown ranges; these men in the rifle companies to be apportioned equally among the squads.

All the rest to be gunmen, issued the military shotgun, and trained by breaking clay discs with bird shot, the discs to be thrown at unknown ranges, without warning, in unpredetermined directions, at the soldier, away from him, and from his flanks.

The obvious intent of all this is to make the individual soldier as independent and self-sustaining as possible. For in this manner only may the squad, platoon, company, and larger units respectively be made independent and self-sustaining. Future wars, so far as this country with its vast area is concerned, in all probability will be decided by swift, surprise thrusts of highly mobile, self-sustained units acting at great distances from bases of permanent supply. The prolonged stalemate of locked masses of men in one small locality of so great a total area hardly can be expected to decide the issue.

In any case, the Marine Corps with its chronic numerical inferiority, and tough, important, distant assignments on short or no notice, definitely falls into this class where individual, independent, and lethal action is paramount. From all logical approaches to the question, this seems to be a logical reply.

BOOK REVIEW

Review by Lieut. Col. C. H. Metcalf, U.S.M.C., of new book, entitled:

Modern Military Dictionary. By Max B. Garber, Colonel, U. S. Army, Washington, D. C. Published by the Author, 1936. \$2.50 cloth; \$2.75 leather.

Correctly to evaluate Colonel Max B. Garber's recently published *Modern Military Dictionary* from the viewpoint of a Marine officer it is necessary to consider it first from the point of view of the military officer, then from the point of view of a Marine officer who, in many senses, is both military and naval, and from the purely naval point of view.

The dictionary itself stands as an unchallenged monument of years of painstaking and careful research by Colonel Garber in order to compile a technical dictionary of some ten thousand terms clearly defined in a purely military sense. The work is much more satisfactory for looking up military terms than even the most complete unabridged dictionary as the military significance of the term is given the only or primary definition. This dictionary should be of great assistance in clearing up the indefinite meaning of many terms having military significance and in that respect the work will be a permanent contribution to military knowledge. The definitions are expressed in clear and simple English. The work contains not only military words and terms in current use but of obsolete terms which are found in old military histories as far back as those of Thucydides and Xenophon.

From the standpoint of our own officers the work is not complete enough in that it does not contain terms which have been evolved pertaining to amphibious and naval warfare. The Marine Corps has evolved a parlance of its own for the former type of warfare whereas it is expected to be conversant with the more nautical language employed by the Navy. The deficiency of the work in supplying definitions for terms which are applicable to joint Marine Corps and Naval operations, especially in forced landings supported by the Navy, is readily manifested by attempting to look up such terms as Guide Planes, Rendezvous Areas (for boats or vessels), Landing Force, etc.

Colonel Garber's dictionary, of course, is not intended to be nautical or naval in its scope and for that reason does not contain many of the terms applying to naval warfare of which the Marine is supposed to be familiar. Dictionaries of naval terms are, of course, available and together with this work should go to make the necessary tools for the student of both naval and military subjects. Since the Marine officer works in both of these fields in addition to a sort of borderland "no man's land" between the two, it is manifest that a combined dictionary of the two fields plus the necessary definitions of the terms in his own peculiar parlance would be necessary to make a complete technical dictionary for the Marine officer.

Colonel Garber is said to have spent fourteen years in the preparation of his scholarly dictionary, expecting during all this time no doubt to furnish a comprehensive work for the use of many thousands of military officers. With the prospect of being able to furnish a dictionary to only about one thousand active officers of the Marine Corps it is apparent that such a monumental work as that compiled by Colonel Garber will not likely be undertaken for the specific use of the Marine Corps. The writer therefore believes that Colonel Garber's *Modern Military Dictionary* is the best work obtainable and recommends it as an addition to the professional libraries of Marine officers.

THE SECOND DIVISION MEMORIAL

■ On July 18, 1936, the impressive Second Division Memorial on Constitution Avenue near Seventeenth Street, Washington, D. C., was dedicated to more than 4,000 dead and 20,000 wounded of that division who fell in France. Standing more than 26 feet high, on a base 35 feet wide and 25 feet deep, the memorial forms a great open doorway, flanked by inscribed wings of granite. Before this doorway stands an 18 foot flaming bronze sword, symbolic of the Second Division's stand at Chateau Thierry and Belleau Wood, where it barred the Germans from Paris.

The dedication ceremonies were brief, but impressive. After the massing of all the colors of the units of the Division, honors were rendered by the U. S. Army and Marine Bands to the wartime commanders, Major Generals James G. Harbord and John A. Lejuene. General Harbord made a stirring address in which he traced the valiant history of the Division. After a benediction, the 16th Field Artillery fired a twenty-one gun salute and "Tap" were sounded.

USE OF CHEMICAL AGENTS IN GUERRILLA WARFARE

1ST LIEUT. ROBERT L. DENIG, JR., U.S.M.C.

■ On New Year's Day, 1931, the telegraph operator informed the Commanding Officer of the Northern Area of Nicaragua, whose headquarters was at Ocotol, that telegraphic communication to Apali had been severed. Consequently a patrol of ten men under a sergeant was ordered out with the uninteresting mission of repairing this line. No bandits or guerrillas had been seen or heard of in that area for several months and all hands were certain that they had retired to an area north of Ocotol and near the Hondurian border, so the Commanding Officer considered that this patrol was sufficiently strong to take care of any emergencies that were likely to arise. But in the late afternoon a strong combat patrol was rapidly pushing its way down the trail in a vain attempt to rescue their comrades. This telegraph line followed the trail from Ocotol to Apali which was some fifteen miles away as the crow flies but considerably further along this winding trail. The nearest outpost to Ocotol was at Apali, and as it turned out, the wire had been cut midway between these places where any repair party could expect no immediate help. As this small party neared Rio Achuapa, the trail came to a flat and barren expanse, several hundred yards long, that afforded neither cover nor concealment. Beyond this the trail led over a low saddle flanked by steep rugged knolls which were covered with heavy underbrush. As they approached the center of this barren field the Marines were met by an accurate and heavy rifle and automatic rifle fire. No cover being available, the patrol threw themselves on the ground where they were and took up the fire fight. A few hours later the relief combat patrol arrived at the scene only to find that the last of the bandits had vanished in all directions, leaving behind eight dead and two wounded Marines where they had been initially pinned to the ground. The dead had been horribly cut to pieces by cutachas while the wounded were unconscious nearby in a spot where they had tried to find concealment. Later from a captured bandit it was discovered that the guerrillas had numbered a hundred, sixty being armed with rifles and automatic rifles, the rest with cutachas. Nothing else could be found out except that the fight had lasted a considerable time. This is an example of typical engagements with guerrillas and shows characteristics common to most of them. The bandits pick a position which gives them a great advantage in cover and at the same time denying cover and concealment for troops operating against them. Also they never fight unless they have overwhelming odds of about ten to one.

In the above engagement a few white phosphorus (WP) rifle grenades might have changed the outcome, for the Marines could have dropped a few grenades on the bandit positions upon the knolls and during the ensuing smoke and confusion arising from the burning particles of WP in the bandit ranks, retired to a more favorable position to engage in the fire fight.

Up to the present date United States Forces have not used chemical agents while operating against guerrillas or bandits in Caribbean countries or in the Philippine

Islands. We ask ourselves why we have failed to use this potent weapon which in reality is more humane than shooting or blowing people up in small bits, for casualties arising from chemical agents have a better chance of recovery than do those who are wounded by high explosives or small arms bullets. The answer is public sentiment, as the average American citizen still views the use of chemical agents with alarm if not with downright terror, although the use of chemicals in civil disturbances during the past few years has done a great deal to educate the public. Furthermore, although the United States has not been a party to any treaty now in force that prohibits or restricts the use in warfare of toxic or nontoxic gases or of smokes or incendiary materials, we have always taken the lead in the attempt to bar them from warfare. Consequently the government has refrained from using them in accord with the public wishes.

Being unable to find any examples of the use of chemicals in Nicaragua I investigated the small wars engaged in by foreign powers. Again I discovered that the use of chemicals was just about nil. From time to time we have read accounts of the use of chemicals by the French and Spanish against Moroccan tribesmen, by the Japanese in their subjugation of robber bands in Manchuokuo and by the Italians against the Ethiopians, but as this information is usually sketchy and comes from all types and sources, I don't think that it would be wise to use these instances as examples.

However, the use of thermit bombs or other incendiaries during the Italian bombardment of Dessey is a know fact and a great deal of damage was done by their incendiary action on the mud and wooden huts. Also these bombs had a terrifying effect on the natives and caused quite a few casualties from the molten metal in the form of burns. The use of airplane chemical spray such as mustard would have been an ideal weapon against charges in close formation that the Ethiopian tribesmen indulged in so freely and I think that the Italians undoubtedly used this method of defense. However, the Ethiopian is a brave fighter and loves to assault his foe and grapple in hand to hand combat, therefore tactics used against him would have to be different than those used against guerrillas. Guerrillas roam about in small bands and only attack when everything is in their own favor. They have no standard uniform, live off the country, are poorly armed and recruit from malcontents in the area they happen to be operating. Their first plan in going into action is to insure a good line of retreat. Due to this and the fact that they never wait to come to close quarters it is hard to inflict severe casualties on them in these engagements. Furthermore, the outlaws are becoming equipped with automatic weapons and good rifles and in many instances are well led. Consequently the irregular is nearly on a par with the regular soldier. So we see that it is becoming increasingly difficult to disperse or capture the guerrilla. In an attempt to offset the increasing power of the irregular we should introduce some weapon to maintain the

superiority of the regular soldier and I think that chemical agents must be resorted to.

In order to combat these mobile bandit groups our forces must operate in small combat patrols of about 15 to 50 men whose bases are strong and well protected outposts. Furthermore, to keep the mobility of these patrols it is necessary in most instances to march by foot using a few if any pack animals for the transportation of food and ammunition. Therefore, each member of a patrol must carry a rifle, a Browning automatic rifle or Thompson sub-machine gun plus ammunition, some food and a blanket roll. All of this adds to considerable weight and slows down the patrol when they have any difficult terrain to cross, and which is the usual type found in operations against guerrillas. We should now attempt to analyze whether or not it is of any advantage to further burden troops with chemical munitions and special chemical weapons. It must be kept in mind, however, that chemical agents cannot be used as a substitute for rifle or machine gun fire and high explosives—they supplement such fire.

There are quite a few chemical agents we can use. I will take them in order and try to discover if they would be suited for our use.

First there are non-persistent lethal agents such as phosgene. As this agent requires heavy concentration and must be fired in large containers such as a Levens projector shell or a 155 mm. howitzer shell, it is obviously unsuited for patrols or in the defense of outposts.

Secondly, there are persistent lethal agents such as mustard and Lewisite but their persistency and slow action would be of no value to a patrol as contaminated areas may hamper our own movement. Besides the usual engagement does not last long enough for the gas to take effect.

Thirdly, there are lacrimatory gases, chloracetophenone (CN), and toxic smokes, adamsite (DM), which are non-resistant. These agents are ideal and could be used to a great advantage to immobile outlaws. However, weather conditions must be favorable if we are to use them unless we desire to equip our patrols with gas masks.

The last group of agents are screening smokes such as white phosphorus (WP) and HC mixture. WP could be used to advantage against enemy machine guns and automatic rifles by blanketing their fire with smoke and through the casualty effect of the particles of the burning agent. HC mixture may be used in some cases where flank movements must be made and no cover is available, besides it would be handy to indicate patrol positions to friendly aircraft.

From the above we can readily deduce that tear gas, toxic smoke, and screening smoke, are the best agents to be carried by troops operating at a distance from their base, CN and DM when the patrol is mounted or has plenty of pack animals to carry the masks and munitions required. In small mobile patrols I think that WP is the only agent suitable because men on foot should not be hampered with masks in addition to chemical munitions when they are already packing a considerable load.

The next consideration is the type of weapon we should use to project these chemicals.

On the first glance we see that big artillery of the 155 mm. type and the Levens projector are out of the ques-

tion. The 75 mm. pack howitzer may be disassembled and loaded on animals but in actual conditions it is impracticable for even this caliber gun to successfully operate.

The next in order is the 4.2 inch mortar, 81 mm. mortar, and the 2 inch hand mortar. The weight of the first two mortars make them unsuitable for mobile combat patrols but they are good chemical weapons and should be taken along with very large patrols (over 100 men) and with pack train guards. They also could be successfully used in the defense of outposts where they could be set up on prearranged locations, fire ranging shots and use either WP or CNS (tear gas solution) chemical shells during a hostile attack. The 2 inch hand mortar to my mind is the ideal small patrol weapon. It is light and can be set up in a few seconds. Both chemical agents and high explosive shells can be fired in this weapon and its range is great enough, 700 yards, for most situations that patrols would encounter.

Airplane bombs and spray can be used but a high degree of coordination between the ground and air forces is needed for this to be successful and this is very hard to obtain in jungle warfare. This method therefore should only be used when no other method is available.

Lastly we have hand grenades, rifle grenades and irritant smoke candles. Both the hand and rifle grenades are ideal as no special weapon is needed to project them whereas the weight of the DM candle (9 pounds) prohibits its use on the trail although it is a fine weapon for the defense of an outpost or in a situation where we have the bandits bottled up, which rarely happens.

In reviewing our weapons we have available the 4.2 inch and 81 mm. mortars which can be used in the defense of an outpost or can accompany large patrols or pack train guards. In addition we can use in all size patrols and in outpost defense the 2 inch hand mortar and the hand and rifle grenades, all of which are light and mobile weapons.

If the tactical situation demanded it and if it was desirable to use lethal chemical in a small war operation, during a certain phase of the offensive it is desirable to know weather conditions as this factor is of paramount importance in handling chemical clouds. The theatre of guerrilla warfare is frequently in tropical climates where violent and sudden changes of weather conditions occur. These changes can fairly well be predicted after several weeks or months of observation and each outpost should keep a complete record of weather changes so that if chemicals are to be used, data will be available. In tropical countries north of the equator the northeast trade winds blow quite steadily, reaching their greatest intensity about mid-afternoon and dying down at night. In some localities the wind may shift and blow from the southeast for weeks at a time.

Lakes and mountains may shift the wind as much as 45 degrees, also certain areas may have heavy rains for short periods of time while an area close by may have almost constant rainfall. This change is abrupt and clearly defined and a few hundred yards will show the difference. Therefore weather records will greatly assist the chemical officer in making his chemical estimate of the situation.

Weather, besides affecting the use of an agent in the field also has a marked influence on the munition itself. The dampness and humidity of tropical countries soon deteriorate the munitions, consequently they should be

kept sealed in a cool dry place. Only munitions as needed should be broken out and issued and each lot should be periodically tested to see if they are still serviceable. Gas masks should be kept in their inert containers as long as possible as rubber and the canister contents soon become useless.

In summary we can make a few observations. The disadvantages arising from the use of chemical agents in guerrilla warfare appear to be (1) Increasing the weight of the load carried by the soldier or pack animals by the weight of the munitions and in the event of the use of CN, DM or lethal agents by the addition of a gas mask. (2) Complaints from home and abroad of the use of chemical agents. (3) Destructive effect of tropical weather on chemical munitions and gas masks plus the generally unfavorable weather conditions such as heat and humidity which affect chemical cloud travel.

Advantages appear to be (1) The maintaining of the superiority of regulars by the use of a new weapon, (2) The immobilizing of the irregulars by the use of CN and DM, (3) The casualty effect plus the effect on the morale of bandits caused by WP, (4) Flanking movements may be carried out in unfavorable terrain by the correct use of a chemical screen with the added effect of reducing accurate fire by the enemy, (5) After the reduction of one or more positions which the outlaws consider impregnable their morale will suffer and thereby reduce their activities, (6) The added fire power that we can give to our base of supplies—the outposts—will allow us to attack the guerrillas with vigor when knowing that our bases are secure.

In conclusion we can deduce that lacrimators, toxic smokes, notably WP, are the best chemical agents to use in brush warfare. That hand and rifle grenades, plus the 2 inch hand mortar are the best methods of projecting these agents by small mobile patrols. That large patrols, pack train guards and outposts can use in addition the 4.2 inch and 81 mm. mortars.

Furthermore, chemical agents will be of immense value to the regulars in maintaining their superiority over the increasingly better equipped irregulars, as they have no protection against chemical agents. But it must be always remembered that these new weapons cannot be used as a substitute for rifle, machine gun and automatic rifle fire and that they should be used when no other weapon will take their place in order not to add materially to the problem of supply or affect the fire power of the patrols.

THE COCO PATROL

(Continued from page 23)

company's farms; Assmussen, a German merchant with a branch store at Waspuc; Alfred Webster, an Englishman, resident and patron of Bocay, who had left there in January with a small mahogany run and who told me that the local alcalde at that place was an appointee of Sandino's who levied and collected taxes for him, enforced his decree that no more mahogany should be cut in that area and who shipped occasional consignments of food to the interior for the bandit commissary; Benny Müller, American, owner of Sawa Boom where the annual mahogany run was boomed and sorted according

to ownership; and Harry Carlos, owner of the motor launch *Palpa* and competitor of Kid Green for river transportation.

Just before we left Cape Gracias, Benny Müller, having nothing to do for the nonce, voluntarily joined the patrol in an unofficial capacity. He had been in Nicaragua since 1895, having lived since that time along the lower Coco River and he knew it and its inhabitants as far as Awawas like a book. His services were invaluable. Through him, I learned facts about the terrain, the people and their customs which I would have had great difficulty in obtaining otherwise and his presence with us was a big factor in gaining the confidence of the Indians. Later, when I found that our hired interpreter, Dixon, was using the threat of my patrol to enforce payments of past debts owed him by the natives from his merchant days, I quickly dispensed with his services and used Müller as guide and interpreter to our advantage.

The *Zambita* cleared Cape Gracias at 0935, March 8, 1928. We made good some sixty river miles along the wide, deep and sluggish lower river until we were forced to tie up, at 1530, at Livings Creek because of a burned out bearing. A message was sent immediately to Kid Green asking for babbit and other articles necessary to repair the motor. Livings Creek was well named, for it was certainly alive with red bugs and sand fleas during the day, with lice and mosquitoes during the night. I found no other place during my stay in Nicaragua to equal it. While here two men of the patrol made their first attempt at navigating a native dugout with a pole and paddle as they had seen the Indians do. They pushed out into the river, both paddling frantically, first on one side, then the other. The boat went round and round in circles until finally the current washed it ashore a mile or so down stream and the two men gave up the attempt and walked back. It was ludicrous enough but it was a fair example of what might be expected from men whose only experience with water craft had been as passengers in a ship's motor sailer. A year later, both these men were fair boatmen and could handle pole or paddle creditably.

Because of this motor trouble we did not arrive at Sacklin until the morning of the twelfth, two and a half days behind our schedule. Here we found Sergeant Mosier and his patrol encamped in a good position to cover the river, all land approaches and the village. He had arrived as originally planned on the evening of March ninth.

Before leaving Sacklin the following message was forwarded via runner to the Commander, Eastern Area:

"8612 Arrived SACKLIN 0800 this date. Mosier reached here about 1430, 3/9/28. Has excellent location for camp. I have lost 2½ days thru engine trouble—burned out bearings and ignition . . . Commandante reports 40 armed men SANG SANG and 150 to 300 BOCAY. Am going BOCAY if possible. Cockburn knows nothing about them or at least denies knowledge. Due to slow travel thus far and previous information, we are expected by natives as far up river as SANG SANG. Mosier's trip was an entire surprise to inhabitants. Health of all hands excellent. . . . 1030."⁵

I have quoted this message to illustrate two points: the difficulty of obtaining reliable information under conditions which existed in Nicaragua; and to combat the

⁵FIELD MESSAGES, from Wanks Reconnaissance Patrol to CO, Eastern Area, Nicaragua, Mar. 7-28, 1928.

fallacy that all movements made by Marine Corps forces in that country were known by the inhabitants.

The difficulties of obtaining reliable information in small wars have been stressed in every publication on the subject, but one does not realize just what these difficulties are until experience teaches him to take into consideration the character of the informant, his political affiliations and local conditions which may and do influence all reports. The Commandante referred to above, Gabriel Garay, was a Conservative who had recently come to Sacklin from the central part of the country upon being appointed Agente de Policia by the Jefe Politico of the department. He was not well liked by the local inhabitants; he disliked and despised them and was afraid of them as well. Under these circumstances he frankly hoped to see Marine Corps forces posted along the river and his information, most of which had a basis of truth, was greatly exaggerated in every particular with this aim in view. On the other hand, Adolfo Cockburn, patron of the settlement, was a Liberal and a permanent resident. He was the antithesis of Garay in political belief and by nature. There was no assurance that we would ever garrison the river valley or, if we did, that we would stay long enough to eradicate the bandit element from Nicaragua. Although Sandino did not occupy that section of the country and, up to that time, his cohorts had not invaded it, his influence was distinctly felt through agents and propaganda. The probability of bandit reprisal for assistance to us outweighed in his mind the advantages to be gained thereby since he had every intention of living there long after our withdrawal from the country. Although Cockburn often helped our patrols in a material way, to his financial benefit it is true, I do not believe that he ever gave us information of value.

Bucking the current of such a river as the Coco is slow and tedious work. The river winds and bends in its course so that trails from village to village are shorter and can be traversed quicker than by the ordinary river craft. In one place we traveled around a big bend, three and a half miles of it, while the intervening bit of land was only a few hundred yards, less than a quarter of a mile. Not only on this patrol but in the majority of those along the river, report of our progress was always ahead of us. But in those cases where we abandoned the river and used the trails instead, we invariably surprised the natives. This was especially true where shore patrols were combined with boat patrols. Their attention was focused on the river—the more usual route—so that a patrol like Mosier's, coming in from an unexpected quarter, was never anticipated. This lesson, too, was later used to good advantage.

One other bit of information picked up at Sacklin, interesting chiefly because it anticipated Sandino's actual movements by one month, is quoted from the daily Record of Events: "Sandino is now supposed to be in PIS PIS district where he has taken over gold mines. He is reported to have about 200 men all of whom are mounted. Sandino is kept informed of activities at PUERTO CABEZAS by agents located there who go up via WANKS RIVER. He is securing arms and ammunition and is reputed worth \$125,000.00." Just one month later, April twelfth, "Sandino's forces of about 150 arrived

at La Luz y Los Angeles mines in the eastern central part of the country (Pis Pis area) and took complete possession. They seized all monies, gold amalgam, merchandise and live stock. . . . The bandits were well armed and mounted but poorly clothed."

Between Sacklin and Waspuc, which we reached late in the afternoon of the fourteenth, we passed through several sizable rapids. The largest was that of Lalakapisa, meaning "Lost Money," so named by the Indians because of the large number of gold-laden boats from the Pis Pis mines which had capsized there. This was not a particularly bad rapid but it required nearly three hours to portage it and to drag the Zambita and its bateau through it. The water in the river was fairly low, too, and we were often forced to get into the stream to help the two boats through stretches of shallow water so that our feet were wet from morning to night.

By this time we had learned the art of clearing away the larger stones from the top of the sand-bars, uncovering the fine soft sand beneath in which we dug depressions for hips and shoulders, and thus making a comfortable bed in the open free from the mosquitoes, sand fleas and red-bugs which infested the grass covered banks and native houses. The nights were clear, with no rain, so that shelter halves were never used.

Waspuc was a settlement of seven well built frame houses with a two story store situated at the confluence of the Coco and Waspuc Rivers. Trails led north into Honduras, northwest along the Coco as far as Awawas, and south along the Waspuc to the mining area. We were informed that this last trail was seldom used, the Indians normally traveling by water. The north bank of the Coco was well cleared and offered a good site for a camp which would control traffic on both rivers and along the trails.

On the fifteenth we went ten miles south along the Waspuc River to Yahook Falls while the boat crew overhauled the motor of the Zambita which again had developed an ominous sound in its bearings. We spent the night of the sixteenth at Sang Sang, a clean native village built around the Moravian Mission of a German, Otto Schramm and his family; then on to Asang and Awabila, which we reached soon after noon of the eighteenth. This was the limit of motor boat travel, at the foot of the Kiplapine Rapids, the first real rapid of the river, with its half mile of bad, turbulent water, rushing down a gradient of forty degrees through rocks and boulders which churned the water into good sized waves and whirlpools and eddies and gave us some idea of what we might expect as we went inland.

I had received information that one Colonel Ramos with an Honduranian patrol—one of those I have mentioned as making annual trips along the river to collect taxes—was at Awawas above Kiplapine, having crossed from the valley of the Patuca along a good twelve mile trail which joins the two at that place. Leaving three men with the Zambita, I proceeded overland hoping to interview him. He also had news of us so all that I found was a letter in which he offered to cooperate with us in preserving law and order and the information that he and his seven men had departed for the north.

On the way back to the Zambita I had my first experience at shooting a real rapid. There is no thrill like it: the acceleration of the boat; the rush and roar of the water; waves tumbling around one, often half filling the boat before it reaches the end of its run; the tenseness of the boatmen as they crouch in the bow to fend the boat

⁶RECORD OF EVENTS, Wanks Reconnaissance Patrol of March 7-28, 1928.

⁷EVENTS IN NICARAGUA SINCE FEBRUARY 28, 1928; p. 145, Marine Corps Gazette, Vol. XIII, No. 2, August, 1928.

away from rocks, crags and hidden debris; the shouts and cries of the Indians as they wager their skill, quickness of eye and deftness with pole and paddle against the river; and the breath-taking excitement of missing rocks and a ducking, if nothing worse, by inches. I later learned that all Indians disliked to carry white men through bad water; they would usually become excited, capsize the boat and often drown, and the Indians would be blamed for the accident, but during the next few months I rode every rapid on the river.

We returned to Waspuc on the evening of April twentieth. There was still the urge to go on to Bocay. So far as I had been able to learn, no one had come down river from there since the first of January. Just what was the nature of the country above Awawas? Was Bocay actually controlled by Sandino, and were the rumors which still persisted that there were armed forces at that place true? Having come thus far I decided to try to find out.

The Zambita was of no further use to us and it was sent back to Cape Gracias with its native crew. Three men were left at Waspuc with instructions to remain there until the thirteenth of the month when, if no word was heard from me, they were to return to Puerto Cabezas by way of Sacklin. The other two men and myself started up river. At Sang Sang I secured a native poling boat and a small boat crew which were towed as far as Awabila by an out-board motor launch, the property of a native merchant, Martínez. Above that point we would proceed by poling. The plan was not so rash as one might think. The Miskita Indians who lived along the river might not be actively friendly to us but they had an inborn hatred of the Spanish-speaking Nicaraguans which removed any real danger from that source. Any report of our movements would be interpreted as a part of a much larger body of troops and by the time it reached Bocay, our three men would have become thirty or more. And the river was always a source of escape for we could float down stream as easily and as quickly as any one else.

But we did not reach Bocay. About noon of the twenty-third, at the head of Karasus Rapids, we met an English-speaking creole en route to Puerto Cabezas with his entire family and belongings. He had left Bocay three days before. He confirmed the stories of Sandino's influence at that place and that numerous men had passed through on their way to join the outlaw forces, some with the expressed intention of later returning with a large force to raid the Coco River valley; but he denied that there were any armed men then at Bocay. His story seemed straight enough and my opinion of it was confirmed by a Cuban living near-by whom I knew to be distinctly unfriendly with the bandit element. We therefore turned back, reaching Waspuc late the following afternoon and Cape Gracias at ten thirty on the night of the twenty-sixth. A radio was sent to the Commander, Eastern Area, reporting our arrival, some of the results of the patrol, requesting further instructions and indicating our readiness to return to the interior immediately if such action was deemed necessary or advisable. On the twenty-eighth the *North Star* arrived with orders for our return to Puerto Cabezas which place we reached just before midnight.

During this three weeks' reconnaissance we had traveled inland a distance of some two hundred sixty river miles from Cape Gracias. We had gained a thorough knowledge of the river, its transportation facilities and

the terrain through which it flowed. Most of the bandit information was negative although there were certain positive elements. In his journey up river in 1927, Sandino had treated the inhabitants of the river in a friendly and conciliatory manner so that the feeling not anti-American, was certainly not anti-Sandinista. Through his agents, Sandino exerted a distinct influence throughout the whole valley and he received tribute of both money and food from as far east as Bocay. There was no apparent regular traffic upriver to the outlaw forces although there was a continual drift of malcontents and petty bandits along that route to the interior. The forty armed men reported to be at Sang Sang had dwindled into none before our arrival at that place. In February, however, the Agente de Policia, Marcos Aguero, had been deposed upon the arrival of Lopez at Cape Gracias and had gone up river with a few followers with the expressed intention of joining Sandino, securing a commission, men and arms and returning to raid that part of the country. The people expected such a raid in the near future. There was a persistent rumor that Sandino would soon move eastward through the Pis Pis area or down the Coco River, or perhaps by both routes. Because they were not sure of Sandino's control over the numerous outlaw leaders whom he had gathered around him, the more influential people along the river frankly expressed the hope that Marines would garrison the Coco to protect them against such raids.

Perhaps the most important result of this patrol was the contact made with the inhabitants of the lower Coco valley. It was my belief that, if we were to succeed in our mission of eradicating the bandit element in Nicaragua, we should make every effort to gain the friendliness and cooperation of the peaceful citizenry. On our way up the river, nearly every native village would be deserted upon our arrival. At the end of a half hour or so, two or three women would appear from the brush. When nothing happened to them or to their belongings, other women and children came out from hiding and finally a few men would show up. Through Müller, I met all of the influential people in this section and the chiefs of the larger settlements, and they in turn assisted in inculcating the ordinary Indian with the idea that we meant them no harm and were there with the intention of helping, not injuring them. Such people as Alverado at Waspuc and the Reverend Schramm at Sang Sang controlled the country and it was to our interests to cultivate their good-will. It did not detract from my position as commander of the military force operating in that vicinity and without their cooperation my task would have been infinitely more difficult if not impossible.

Except for a few Americans, the German missionary at Sang Sang, and three or four Spanish-speaking patrons, the inhabitants were all Miskita Indians. These people were extremely primitive. They lived in thatched huts, open on three sides, the fourth side towards the prevailing wind being thatched or covered with split bamboo to keep out the rain. Cooking was done over an open fire laid in the center of the hut. Dogs, pigs and chickens occupied the huts jointly with their owners. They were a short people, the average height being about five feet. All were infected with hook and stomach worms and apparently tubercular. Any one of more than forty years of age had exceeded the normal span of life. Boys were universally naked; young girls were clothed in breech clouts only; while adult males wore

trousers and the females skirts which were never removed before a white man, even when bathing. Upon our approach, the women would rush into their huts and don short circular upper garments slipped over their heads which gave them the feeling of being completely clothed above the waist, but which in effect did little to cover their nakedness. The river was a part of their life. They were taught to swim as soon as they were taught to walk, and once they could stand erect they found a pole and paddle thrust into their hands so that they could learn to navigate the native pitpan. The native language consisted of some four hundred words. To these had been added some English words and a few of Spanish origin. They could count from one to six by naming the fingers of one hand plus the thumb of the other; there was a word for both hands together indicating ten, and one for both hands and both feet indicating twenty. Anything over twenty was simply "a great many" and was naturally very inaccurate. Their knowledge of money consisted of the dime (a ten cent piece), shilling (a quarter) and dollar. Any piece of paper money was a dollar which meant that only dollar bills were really suitable for financial transactions. Like all primitive peoples, a leaf of tobacco, a little sugar or salt, a cake of soap, or any similar article would purchase more and was more acceptable to them than its equivalent in coin. The Miskitas are naturally a peaceful people, fighting only when forced to do so and then unwillingly. They were inculcated from the time of their birth with a hatred of the Nicaraguans whom they called "Spaniards" and so were potential allies if properly approached and handled. During all of my activities along the river I found these Indians to be entirely loyal and dependable to me. By learning enough native words to make my wants known to them; by showing an interest in them and their mode of living; and by always treating them fairly, I believe that I succeeded in that part of my mission "to establish cordial relations with the inhabitants."

All of the above was reported to the Commander, Eastern Area, with the recommendation that the lower Coco River be garrisoned with a base at Waspuc, which I considered the critical point, and in sufficient strength to patrol the valley as far as Awawas to deny that section to bandit operations. I also recommended that Johnson outboard motors be procured for use on the native boats as essential to efficient communication and that rubber covered sacks be used by each individual in place of the regulation pack and for perishable provisions as the only satisfactory method of keeping them dry. These recommendations were approved and initial steps taken to put them into effect.

SECTION III—THE WANKS PATROL

Hardly had I reached Puerto Cabezas before I went on the sick list with malaria, the first of four attacks within the next year. During my absence, the Eastern Area had continued to grow. Additional men had joined the 51st Company at Bluefields and Puerto Cabezas and, prior to leaving the latter place for the States for overhaul, the *USS Tulsa* had disembarked her Marine Detachment under the command of Captain John A. Tebbs. Lieutenant Jesse S. Cook, Jr., had reported for duty. An additional barracks building had

been erected so that all troops were comfortably housed.

Arrangements were being made to garrison the lower Coco valley by the middle of April. In the meantime, Major Utley decided to send a reconnaissance patrol into the Pis Pis district by way of Prinzapolka and the Rio Bambana. It was finally determined that this task would be undertaken by the *Tulsa* Detachment and that the *Denver* Detachment would go to the Coco sector. The Pis Pis patrol left the first of April.

About eleven o'clock on the morning of April sixth, 1928, a radiogram was received from Brigade Headquarters reporting increased native rumors that the main outlaw force was moving towards the east coast. Scarcely a half hour later, and within a few minutes of each other, came two reports to the effect that Marcos Aguerro had made his threatened raid along the Coco and that bandits were then in Sang Sang and expected farther down river. One of these reports came overland by messenger from Sacklin; the other by radio from Cape Gracias.

By four o'clock that afternoon the Wanks Patrol, consisting of two officers, thirty-seven enlisted Marines and one enlisted Navy, had been organized and was embarked on board the *USS Galveston* for transportation to Cape Gracias á Dios. Its mission was to advance to Waspuc, establish a base in such a position as to close the Waspuc and Coco Rivers at their junction and to operate up either at discretion.

This patrol was composed entirely of men of the *Denver* detachment except for Lieutenant Jesse S. Cook, Jr., attached from the 51st Company as second in command. It was organized into a patrol headquarters and two sections of two squads each. As on the reconnaissance patrol, each squad was armed with seven rifles and one Browning automatic rifle, with no grenades of any description. One hundred rounds of ball ammunition was carried on the person of each rifleman and four hundred forty rounds carried in each squad for the automatic rifle. Twenty-one rounds of pistol ammunition was carried on the person of each man armed with that weapon. A reserve of seven cases (8,400 rounds) of caliber .30 and one case (2,000 rounds) of caliber .45 was carried with other supplies. Besides the regular infantry platoon armament, the two Lewis machine guns brought ashore from the *Denver* were also taken. Each man carried his poncho, shelter half, mosquito net, one complete change of clothing and at least four pairs of extra socks. The regular garrison shoe was worn as no field shoes were available. There was a thirty day ration supply, with an understanding that Area Headquarters would start replenishment not later than April twenty-fifth. Communications were to be by radio from Cape Gracias and by runner above that point. A new Johnson outboard motor was carried to be placed in commission once the base camp was established to maintain liaison with the patrol. As was the case on the previous reconnaissance patrol, necessary cash had to be advanced from my personal funds.

The *Galveston* lay to until four o'clock the following morning so as to arrive off Cape Gracias at high water, dropping anchor at 11:30 on April seventh. Disembarkation was carried out by boat and barge belonging to Kid Green. A good sea was running which made this a slow and difficult process. It was not until two hours later that the last man was put ashore at the Custom House dock.

The inhabitants at Cape Gracias were greatly excited and upset. They reported that the bandit raiding party had consisted of twenty-one Spaniards and many Indians recruited at Bocay; that they were armed with rifles and some revolvers but with little ammunition; and that it was supposed to be the advance party of a group of about two hundred who would raid the entire river. A rumor was current that our reconnaissance patrol had learned of the advance of this band of outlaws and had returned to Puerto Cabezas because of it. Doubting our ability to cope with the outlaws if they returned in force and fearing bandit reprisals, the local citizens who before had freely offered any amount of assistance which we might need now refused to give us any help whatsoever. It was impossible to hire boats or barges for the move up river, and we were frankly told that even though we might commandeer the necessary transportation, we could never navigate the Coco to Waspuc without native crews who were familiar with the river. The single exception to this lack of coöperation was a Spanish-American, Philip Martinez, who turned over to us his bateau and outboard motor without charge but with the understanding that they would be returned to him in a serviceable condition after we had finished with them. A barge belonging to Assmussen, large enough to carry the entire patrol and its supplies, and a motor boat belonging to one Caesar which had a more shallow draft and more powerful motor than the Zambita were requisitioned. It was already apparent that the knowledge of boats and the river which had been gained on our previous patrol would stand us in good stead.

The Jefe Politico and the Collector of Customs both requested that a guard of ten men be left at Cape Gracias. As there was no apparent necessity for such action with our patrol operating along the river above them, this request was refused.

We left Cape Gracias by six o'clock that evening. Almost immediately we were confronted with engine troubles which were to delay us for an entire day. The outboard motor which had been turned over to us gratis was found to have a leaking water jacket. By nine o'clock the motor in Caesar's boat had burned a bearing and was no longer serviceable. Another boat on its way to the Cape from Sacklin was commandeered and the advance resumed, only to develop a burned bearing in its turn around midnight which left us tied up in the middle of the low swamp country where millions of mosquitoes made life miserable for us until dawn. As soon as it was light enough, we uncased the new Johnson outboard motor brought from Puerto Cabezas and rigged it on the bateau. With two men, I returned to Cape Gracias where we took over the Zambita and again started up stream. The Zambita might not be so powerful as the other boats but I was sure that it would get us through. The barge was lashed alongside her, with the outboard motor boat on the other side, and the advance resumed. We traveled until four the next morning, when darkness and low water forced a halt until after breakfast.

The river was much lower than during the previous month so that many short stretches of bad water which we had navigated before with little trouble now had to be portaged or the Zambita and its barge had to be towed through with lines from the bow. Lalakapisa was worse than before. Here, while directing the passage of the patrol, I slipped on a rock and, never a

strong swimmer, was caught in the undertow and carried down stream in the strong current, finally being pulled out by Corporal Nunn. Events such as this occurred two or three times a day and prevented the movement from becoming at all monotonous. The outboard motor was a help but because of a lack of spare parts such as propeller shaft pins and propeller nuts, often broken and lost when the propeller hit obstructions in the bottom of the channel, we did not get the maximum benefit from it. The distinctive noise of its exhaust could be heard a considerable distance in advance. This would have been a distinct disadvantage if we had been moving into territory occupied by hostile forces but the value of the motor for maintaining communications after we became established along the river was apparent.

In spite of the native prophecy that we could not navigate the river without the help of local crews, we had no more trouble and made as good time as we had done on the previous patrol. A relay post in the line of communications consisting of one corporal and four men was established at Sacklin on April tenth. On the fourteenth we reached Waspuc and located our main camp so as to control both the Coco and Waspuc Rivers and the trails which led into that place.

We were informed that Aguerro's outlaws had raided Awasbila, Benny Müller's place above Sang Sang and Sang Sang itself, ostensibly because all three had given us information and assistance during the reconnaissance patrol of March. Believing that Marines were still in Waspuc, they had stayed in Sang Sang only a short while, nervously watching the river for our approach the while, and had then hurriedly gone back upstream taking with them three large bateaux and several Indians impressed into service as boatmen. There was now believed to be transportation available at Bocay for an outlaw force of at least a hundred. Aguerro had stated that his was the advance party of a much larger force which would come from the interior about the twentieth of April to raid Waspuc and other points along the river. Besides the main camp at Waspuc, it was decided to place outposts at Sang Sang and Awasbila to intercept the bandits expected from Bocay and to send occasional patrols along the Waspuc towards the mining area so as to keep informed of conditions in that direction.

The above information together with the following messages regarding supply were sent to Major Utley at Puerto Cabezas:

"Due to difficulties of transporting gas, oil and other supplies overland, it is recommended that they be forwarded to Cape Gracias and then up the river. Have arranged with Harry Carlos (native of Cape Gracias) to bring our supplies up river every fifteen days. His price is two dollars (\$2.00) per hundred. He will take six cases gasoline, five gallons Mobile 'A,' and five lbs. lubricating grease as part payment each trip, the remainder in cash, gas, etc., at trade prices at the Cape. For the next trip he also wants a battery, 9 volt, 30 amps, to be credited for next trip or until it is paid for. Capacity Carlos boat is 4,500 lbs. . . . Health all hands excellent. 10:30."

"My number eleven (11). Recommend that four men and one NCO, total five enlisted men, be stationed CAPE GRACIAS for purpose of supervising

receipt and expediting shipment up river of stores and supplies which may be sent that way. . . . Am sending list of spare parts for outboard motor which should be ordered from New Orleans and shipment expedited. Also urgently recommend two additional motors, same type as one now on river, model P-40, be purchased and shipped here as soon as possible. Such motors are best transportation available for use on river. Wire Kendall that standard shafts are best for this territory. The long propeller shafts would be of no value here. . . ."

The original plan had been to forward supplies, communications, etc., by rail from Puerto Cabezas to Wawa Central and thence overland by pack train to the outpost at Sacklin which would arrange for further shipment to Waspuc, a plan which seemed especially necessary because of the fear and lack of cooperation of the inhabitants at Cape Gracias. Carlos would no more have made this agreement with us at the time we landed at Cape Gracias than any other of its citizens but by the fourteenth we had demonstrated our ability to navigate the river without native assistance, the bandits had not waylaid and massacred us, and we had stated definitely that we were there to stay so it was worth a gamble on his part to get in on the ground floor of what might well prove to be a long and profitable business. The advantages of an all water route for our supplies were apparent and with the establishment of an outpost at Cape Gracias the five men then at Sacklin would be released for duty with the main body of the patrol.

An outpost was established at Sang Sang by noon of April seventeenth. It was the largest and most important village on the river and, through the Moravian missionary, exerted a great deal of influence among the natives. It had been more affected by the recent raid than any other settlement. For these reasons it was felt that the presence of a small outpost there would restore confidence and establish liaison with the river people as quickly as at any place on the river although otherwise it had little military value and would have been hard to defend against attack.

The rumor still persisted that the outlaws would return not later than the twentieth. As soon as our outboard motor could be rigged onto Martinez' boat, I started with a patrol of seven men for Awashila with the intention of laying an ambush at the foot of the rapids. A half mile above Sang Sang there was a short stretch of bad water. As we reached the very crest of the rapid, the motor sputtered and died. Before we could get the boat under control, the current had caught the bow, turned it across the stream, and we were carried backward against a snag of uprooted trees deposited in the middle of the current by the last high water. The boat hit broadside, swamped, rolled over, and was held fast against the debris. "Lost all provisions, one case rifle and 200 rounds pistol ammunition, one BAR, two rifles, majority of clothing and equipment, and all loose material in boat."⁸ There was a tree stump projecting about three feet above the water some distance below the point at which we capsized. As I was swept down stream, I grabbed onto this and climbed aboard. Even now I can see myself, sitting there for the next two hours directing the Zambita, brought up from Sang Sang, in the work of picking up the other members of the patrol, the out-

board motor, and such articles as could be salvaged. The pressure of the current was so great that we could not free the bateau from the snag on which it was caught and there it remained, so far as I know, until it rotted away.

The following morning brought Arthur Kittle, a youngster of nineteen years, half American and half Miskita, who volunteered his services as guide and interpreter. He was intelligent, could speak English, Miskita and some Spanish, had been reared along the river and in the woods and was without doubt the best man on the trail that I saw in Nicaragua. His first task was to recover the Browning automatic rifle and the two rifles which had been lost the night before. He then told me of a trail which went overland from Sang Sang to Awashila. That afternoon my one squad patrol again got under way carrying blanket shoulder rolls with clothing and provisions. If the outlaws were in fact on their way down river, the best place to stop them was as they entered or debouched from the Kiplapine Rapids where a few well placed men could demoralize any force. We reached our destination the next morning and established a well hidden camp in such a position as to ambush the trail and the foot of the rapids. When the bandits failed to materialize, this outpost was placed under the command of Lieutenant Cook and I returned to Sang Sang and Waspuc.

A few days later an incident occurred which again illustrated the fact that surprise can be obtained by avoiding the regular routes of travel. It was learned that some of the Indians who had been impressed as boatmen by Aguerro had returned to their homes. One of these men lived at Asang. Taking a small patrol of three men, I went to that village only to find that the native whom I wanted had gone into the bush upon our approach. There was no use searching for him so, late in the afternoon, we headed back for Sang Sang. I knew that there was a trail connecting Asang and Krasa, a settlement a mile and a half or so down the river. At that place I left the boat, sent my patrol on its way, located the trail and returned to Asang. I entered the village just before dark to find the entire populace, my man included, assembled in front of the chapel. These people seldom express an emotion of any kind, but there was no mistaking the outlook of surprise which greeted my approach. I gained little information except that Aguerro and his band had gone south from Bocay, ostensibly to join a larger force of outlaws, but the effect produced among the natives by this move was worth the effort involved.

In the meantime two Jamaican negroes had come into Waspuc from the mining area reporting the raiding and destruction of Neptune Mine on Sunday the fifteenth by one hundred twenty-five mounted, well armed, but poorly provisioned men. The outlaws had stayed there only a short while and then moved eastward towards Tunki to await further orders. A patrol was immediately sent from Waspuc which went as far as the mine and returned, reporting: "Bandits at Neptune Mine took about \$5,000.00 in gold and all supplies available, destroyed mine and left. Seventy-five (75) mounted men reported headed for TILBA. Fifty (50) foot soldiers, armed with shotguns and machetes, reported breaking into small groups and going to BILWI (Puerto Cabezas). Mounted men, well mounted and armed."⁸ This patrol had no contacts, saw no bandits and suffered no casualties.

I knew of no trail leading from the Pis Pis area to

⁸RECORD OF EVENTS, DENVER Detachment, 17 Apr., 28.

Tilba, the only settlement of that name which I could locate being the one just above the Tilba Rapids. It was possible that such a trail existed and, although I could see no reason why they should choose Tilba as their objective unless it was with the intention of crossing into Honduras at that point, I informed my outpost at Awabila of this report, added a few men to its garrison, and again inspected their position and disposition.

Reporting the above information by native messenger to Major Utley, I asked for additional men if they could possibly be furnished. I was trying to cover some two hundred miles of river with a force of thirty-seven men. Awabila and Waspuc were both critical points. Although they were not within supporting distance of each other, I considered that both of them should be garrisoned if I was to carry out my mission. I was not particularly worried about Waspuc. The post was small but it was well located with a good defense plan in which the men were trained daily and there was no indication that the outlaws intended to move directly north from the mining area. Schoneberger was further instructed to send daily patrols south along the Waspuc River a sufficient distance to uncover any bandit advance. The outpost at Awabila was not so well located. Any position which effectively covered both trail and river was not adaptable to good defense. The outpost commander was instructed that in case of attack by a superior force he should attempt to hold his position until dark and then withdraw down the river by boat. I, myself, kept continually on the move in the area, visiting first one outpost then the other. During the month of April, I spent exactly two consecutive nights in the same place.

On the twenty-eighth of the month we had our first airplane contact. While proceeding up river from Sang Sang, I heard the distinctive sound of airplane motors above the noise of our own outboard. A moment later, two Corsairs came into sight from the west, flying low and following the course of the river. There was a sand bar on the south bank of the river. I reached it just in time to retrieve a drop message from Lieutenant Schilt asking if the beach was suitable for a landing. It was quite narrow, but long and straight, with a good hard surface free from obstructions. I gave him an OK signal and in he came, followed by Lieutenant Guymon, pilot of the second plane. Schilt handed me the following message:

"Headquarters, Aircraft Squadron, 2nd Brigade,
Managua, Nicaragua. 28 April, 1928

Dropped Message—0900

To: C. O. WASPUC.

1. Situation as known at present is as follows:

(a) Planes reconnoitered SAN PEDRO—NEPTUNE MINE, BONANZA MINE, EDEN MINE and vicinity on 25 April, 1928. Found no evidence of outlaws in the area. Men, women and children were seen in the streets at SAN PEDRO and NEPTUNE MINE but no signs of armed men or animals. Three saddle horses were seen at YAPUWA but no armed men appeared.

(b) 27 April, 1928, planes patrolled LA LUZ MINE and landed at PUERTO CABEZAS. LA LUZ MINE was deserted and no bandits were found. Major Utley had heard rumors from PUERTO CABEZAS that you have been attacked and defeated. Major Utley believes

bandits are still in PIS PIS AREA. They came in from SOUTH (via LA LUZ) with about 200 men and 200 horses and mules. He believes a third column of about 100 men have joined up since. Lieut. Carroll with 20 men and a radio set left PUERTO CABEZAS yesterday morning by boat to re-inforce you. No news has come in from the Army Reserve Major who is scouting for several days. A two company battalion arrives at PUERTO CABEZAS via *USS Cleveland* tomorrow. The troops will be immediately sent into the field. Two amphibian planes are en route to the east coast via the *USS Nitro*. They will base at PUERTO CABEZAS.

(c) The planes making this patrol desire to verify your security and learn any information possible. They are out from OCOTAL and therefore have very little gas. They will check on SANG SANG and BOCAV.

(d) The following panel signals are desired in the order named:

- (1) Whether or not everything is well with you.
- (2) What information you have relative to enemy location.

(g) Working you by plane is very difficult and extremely hazardous. We will have fuel in PUERTO CABEZAS tomorrow and can operate temporarily from there, pending arrival of the amphibians, if the situation is serious enough to warrant.

(h) The General is a little worried about your security in view of the number of outlaws reported, especially your small outposts.

/s/ ROSS E. ROWELL,
Major, U. S. Marine Corps."

Schilt and Guymon took off from their sand bar after about a half hour. Beyond dispelling one good rumor of an outlaw victory and my own recent decease and burial, I had been able to give them very little information, nor could they add to that contained in Major Rowell's message. It seemed that once again the main body of outlaws had temporarily dropped out of sight.

The reason for this plane patrol and the sudden anxiety concerning our security can best be given in Colonel Utley's own words:

"In Eastern Nicaragua in 1928 before sufficient radio equipment had been received to equip patrols, Captain Edson operating up the Wanks, based on Waspuc, reported by runner his intention of making a reconnaissance with a single squad. Several days later Area Headquarters received four reports through four different channels of a fight in which Edson and nine men had been killed. These reports differed slightly in detail but the gist was the same. Coming, as they did, four ways and with Edson's intentions known, it was feared at Area Headquarters that Edson and his patrol had been wiped out. Reinforcements were promptly rushed to Waspuc and aerial reconnaissance requested. For technical reasons the air mission had to be delayed, but within a few days Lieutenants Schilt and Guymon patrolled the area, located the ground patrol, made a difficult landing on a sandbar and talked to Edson. Their report was a great relief at Headquarters. Subsequently it developed that one man, a native, traveling down the Wanks River, had told the story of the mythical fight to a paid agent of ours, to a missionary, to a native civil official and to a party led by an American civilian. Each had transmitted it to Area Headquarters through a different channel as a fact and without giving the source of his information."

The coming of these two planes, the sending of am-

⁹THE TACTICS AND TECHNIQUE OF SMALL WARS, PART II; by Lieut. Colonel Harold H. Utley, USMC; p. 46, Marine Corps Gazette, Vol. XVIII, No. 2, August, 1933.

phibians to be permanently based on the east coast, and the arrival of two additional companies, portended that for the immediate future, at least, the role of bandit hunter would devolve upon the Eastern Area. What would be the task assigned the Wanks Patrol in the coming field activities? Would we move south into the mining area? Or, if the bandits had left there as I really believed, would we continue on up the Coco to Bocay and the interior? Or would we be left where we were while the others carried on by trail? The answer was not long delayed.

On the afternoon of May first, Lieutenant Carroll arrived at Waspuc with his reinforcements of twenty Marines and a Pharmacist's Mate, 2nd Class. He brought with him the portable radio set which had been landed from the *USS Denver*. Communications were established with Puerto Cabezas and three schedules arranged daily. For the first time in the month we were brought into immediate and daily contact with the rest of the area, we could keep in touch with events as they occurred and, from messages received and intercepted, could make a creditable estimate of future events.

For example, we learned that a patrol known as the Prinzapolka Patrol was proceeding by boat up that river to La Luz and the Pis Pis area, and that platoons of the 59th and 60th Companies under Captains Wesley W. Walker and Henry D. Linscott were en route overland via Brown's Camp to Eden and Neptune Mines. These were the two companies mentioned in Major Rowell's drop message as due to arrive at Puerto Cabezas on the *USS Cleveland*. The location of the main body of outlaws under Sandino was unknown but it was reported from Area Headquarters that there was a force of 200 mounted men at Casa Vieja and probably other groups still in the mining area. Local rumors still persisted that a large band of them would soon be down the river from Bocay.

Late on the night of May second, I received a code message from Puerto Cabezas. It was so garbled that it was impossible even to guess at its contents, and it was not until noon the next day that I was able to get a repeat of the message and decode. It was a field order, the gist of which was that my patrol should move south along the Waspuc to its junction with Kuabul Creek and there block such trails as existed leading to the north and west to prevent their use by outlaws who might be driven out of the mining area by our forces advancing from Puerto Cabezas.

This movement had to be by water. The trail leading south was in poor condition and there were no pack animals of any kind available in the neighborhood. I had already ear-marked all the suitable boats along the river so I knew where the necessary transportation would come from; but what about the boat crews? My men had successfully brought the Zambita and its barge up the Coco. I was confident that, if necessary, they could also navigate the Waspuc, in spite of its swift current and many short, bad rapids, even though poling boats and not motor propelled ones would have to be used. But to use Marines meant loss of time—my orders were to reach Kuabul as soon as possible—and with half my force acting as laborers I would not have over twenty men available in case of attack. The alternative was to obtain native crews. Under similar circumstances any Nicaraguan force—outlaw, revolutionary or national—would resort to conscription, giving the Indians plenty of abuse but no pay and very little food for their labor. I had

gone to a great deal of trouble to gain the confidence and friendliness of these people. I could count on them for any assistance I might need along that section of the river which we occupied and controlled but I was well aware that any attempt to hire them for a movement into unoccupied territory which might result in contact with the outlaw forces was doomed to failure. Under the circumstances, however, I decided that I was fully justified in using Indian boatmen, if I could get them. Knowing that one word or the slightest suspicion as to our projected movement would result in the exodus of the entire male population to the bush, no visible preparations were made until late in the afternoon by which time enough Indians had volunteered their services for a couple days' labor to meet our requirements and had arrived in camp bringing their duffel in the inevitable rubber sack. At dawn they were informed of their true destination. Having no money—my personal funds were exhausted—I could only promise them pay when and if I got it, provided they worked faithfully and obeyed all orders given to them. Although they were guarded during the entire move to make sure that none of them deserted, they were fairly treated and well fed, as well fed as we ourselves were; and I never had a more willing or harder working crew of Indians while I was in Nicaragua.

Lieutenant Carroll and twelve men were at Awasbila; Lieutenant Cook and thirteen at Waspuc; the outpost at Sang Sang was abandoned. The remaining thirty-one Marines, one pharmacist mate and myself made up the Waspuc River patrol. We cleared Waspuc at eight thirty on the morning of the fourth of May. A small bateau carrying a corporal and four men was sent forward as an advance guard. Behind this boat came a large pitpan with myself and runner and the remainder of the advance guard squad; then, in column, three large bateaux with the rest of the patrol. Packs were placed in boats with the men to which they belonged; rations for eight days were divided among the three boats of the main body and the radio with its three storage batteries was also carried there. Boats moved in column, either on the same side of the river or staggered on both sides depending on the current of the stream or the nature of the bottom, and at a variable distance depending upon the nature of the terrain and the distance between bends in the river.

Prior to our departure, I had stressed the need for speed in reaching Kuabul but I failed to emphasize the equal necessity for maintaining liaison between units in the column. As a result, the lighter advance guard boat soon lost contact with the slower moving main body and continued to gain distance throughout the entire day. Soon after dark it approached the two house settlement of Marobila where it intended to halt for the night and await the remainder of the patrol. While the boat was still in mid-stream, it was fired upon by a group of men near the larger of the two huts, armed with rifles and dynamite bombs. At the first shot the Indian crew dove over the side and the boat started drifting down stream with neither poles nor paddle to guide it. The men in the advance guard returned the fire as best they could, resulting, it was later learned, in the wounding of four of the outlaws. The current carried them to the right bank of the river some distance below Marobila where they spent the remainder of the night.

At that time the main body was going into camp at the head of the Walaika Rapids, the noise of the water effectively drowning the sound of the firing. When it

reached Marobila the following morning, the outlaws were gone. As there were no signs of any number of men along the trails leading into the settlement, it was assumed that they had come by boat from and had retreated up the river.

It was learned from Pedro Leon, resident at the junction of the Waspuc and Pis Pis Rivers, that about seventy men, under command of the same Marcos Aguerro who had raided the Coco River the preceding month, had spent the night of May second there and had proceeded down river in the direction of Waspuc with the expressed intention of sacking that settlement. He did not expect to find more than a half dozen Marines, if any, in Waspuc. The bandits were poorly armed, with a few old rifles, revolvers, some shot-guns, and several dynamite bombs. There was very little ammunition. They were moving in fourteen or fifteen pitpans, two of which were filled with supplies looted from the mines. They had come into the Pis Pis area on foot from the west after the main body of outlaws had left, picking up anything of value which had been overlooked by the larger force. They had then moved north to Musawas where they had commandeered pitpans and Indian crews, evidently planning to return to Bocay and the interior by way of Waspuc and the Coco River. This plan was frustrated by the contact with our advance guard at Marobila. They were last seen by Leon, poling as fast as possible up the Waspuc River in the direction of Musawas and about five hours ahead of us.

Because Musawas was about the limit of travel for my larger bateaux, I had slight hopes of catching the bandits if there might be some means of escape for them above that point. The natives at Leon's and my boatmen all denied the existence of any trail leading from Musawas towards Bocay or the west and stated emphatically that the bandits would have to return by the same route they had followed coming into the mines. By continuing up the Pis Pis Creek, I could, with good luck, reach Kuabul in time to ambush the Great Falls—Musawas trail before the outlaws could pass over it. Hoping against hope that the information I had was correct and that Aguerro would have to march south, I headed for Kuabul. Corporal Goodling with one squad was left at Leon's in such a position as to cover by fire the Waspuc River, with orders to keep that river under observation until dawn the following morning when he was to rejoin the main body.

Darkness caught us half way through Yapukitang



Falls, a deep, narrow, half-mile long gorge, with its swift, turbulent current and precipitous, unscalable cliffs on either side. There we spent the night, on a flat topped rock, some thirty feet long by twenty wide, scarcely above the water boiling around it. We were glad enough to find even that much to sleep on. The place was so narrow and so deep, and so little light filtered through the overhanging trees that to continue on in the absolute blackness was impossible. Some of the newcomers preferred the smooth hard rock for a bed to the numerous stones which dug into the back and sides of the uninitiated who has not learned to properly prepare a bunk on the sand bars of the river.

We reached Kuabul early the morning of the seventh. I had received a radio from Major Utley that aerial liaison would be established that date by amphibians from Puerto Cabezas. Leaving a small boat guard with the train at Kuabul, the main body of the patrol moved out the Great Falls—Musawas trail to the point where it crossed the Kuabul Creek and there an ambush was laid. Turning immediate command over to Sergeant Russell Schoneberger, I went back to Kuabul for the expected aerial contact. Two amphibians came over, made a drop message, and then asked where were the bandits. We had no panels but with undershirts we laid out signals indicating the general direction of the outlaws and that there was a Marine patrol on the trail. Both of these signals were acknowledged and the planes took off.

Our trap brought no results. We pushed on over the trail to the Waspuc River, forded it, and searched the north bank thoroughly for some sign which would give an inkling of their whereabouts. We found the camp at which the bandits had embarked in their pitpans on the way towards Waspuc but nothing to tell us where they had stopped nor where they had gone on their way up the river, fleeing before us. Probably the information given me about the trails towards the west was as false as other "good dope" had often turned out to be. I was certain that they would not stay in that vicinity, especially after the aeroplane reconnaissance of that morning. I did not believe that they would again move towards Waspuc, and if they did they would be met by Lieutenant Donald H. Taft and forty men of the Marine Detachment of the *USS Galveston* who I had learned by radio and drop message were already on their way to that place; they had not passed over the Great Falls—Musawas trail; so the only other assumption was that they had abandoned their pitpans above Musawas and left the Waspuc Valley by some trail leading to the south or west. At any rate, they were then so far ahead of us that there was no possible hope of again making contact.

On the way back to Kuabul, we found ourselves enveloped in the inky blackness of a tropical jungle night. It was literally impossible to see one's hand in front of his face. To keep the patrol together, each man held on to the belt of the one in front while the leader—one of our Indian boatmen acting as guide—kept to the trail only by feeling for it with his feet before each step. This boy was wearing a white shirt and, an arm's length directly behind him, I could not see where he was. After a half hour of this, a halt was called and we stretched out on the trail until, about ten o'clock, the moon came up to give us enough light to continue the march. Even then we missed the direct trail to Kuabul. Not long after midnight I realized that we were following a different trail than the one we had traversed earlier in the day but my compass and sense of direction told me that our

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general direction was not far wrong. But at three thirty I called another halt. There was no need for going on indefinitely when we should have reached our destination at least an hour before that. At the break of day, there was a rifle shot just the other side of the hill to the east; Flook, the patrol cook, was slaughtering a beef for our day's ration. Kuabul was some three or four hundred yards away. We had followed the two legs of a right-angled triangle instead of its hypotenuse and had stopped moving just ten minutes too soon. But such is the vagary of night movements in a strange country, over strange trails, and without a guide who knows every path and by-way in the area to be traversed.

I do not believe that this experience was exceptional nor that the results should be unexpected under similar conditions; rather we were extremely lucky not to have gotten entirely away from our objective. From the experiences of this march and from several made later, I am thoroughly convinced that night movements in bush warfare should be confined to exceptional circumstances, where the objectives to be gained are clearly defined and can be gotten in no other way, and that such movements will be successful only by the greatest of luck in new and strange territory. The uncertainty as to one's whereabouts, the slipping and stumbling along dimly lighted trails, the straining of eyes trying to penetrate the darkness, the slow rate of march; all these are trying to both man and beast and will soon demoralize the best outfit if continued night after night. In my opinion the supposed advantages of night marches in bush warfare can not begin to equal their disadvantages. The greatest advantage claimed is that of secrecy; but in bush warfare we are confronted only with terrestrial observation and the grape-vine telegraph, not with aerial reconnaissance. A single night's march to a known objective and over familiar terrain can be carried out secretly; but if the point to be reached requires two night marches, the move will be spotted and reported just as fully—if not more so—than would be the one day's march necessary to cover the same distance in daylight. I do not believe that information of a series of night marches made in unfamiliar territory where one is dependent upon native guides, rough and inaccurate sketches, and local information, can be kept from the enemy. The fact that such movements were made without hostile attack means to me only that the area traversed was not occupied in force by the bandits or, as was more probably the case, they were not alert enough nor well enough led to turn such moves to their advantage by springing a couple of night ambushes. As for a successful night attack in bush warfare: such a thing is to be talked about and visualized but hardly to be hoped for under the conditions which existed in Nicaragua. In that thick country, it was hard enough to control an attack in the daytime; such control would be almost impossible at night. The advantage in a night attack is with the defender. To have a chance of success, the attacker must be thoroughly familiar with the enemy dispositions and, more especially, with the lay of the land. These conditions seldom occurred in Nicaragua. A night attack might be made successfully against a small group of outlaws who had huddled into an isolated ranch house whose location and approaches were known, but not against a bandit encampment in such jungle country as Monchones or Oconguas or Poteca.

But I am digressing!

Goodling's squad had reached Kuabul the afternoon before. My patrol was at the place designated in the



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Area Commander's order; but if we were to effectively carry out our mission of blocking all trails in that area, more information, both of trails and of bandits, was necessary.

It was apparent that since my reconnaissance patrol from Waspuc had visited Neptune Mine on the twenty-fifth of April, one bandit group—Aguerro's—had entered the area. Aguerro had been driven to the west and contact with him lost; but were there other outlaws still in the mines? What had actually happened there? Where had the bandits come from; how many were there; where had they gone? Were the 200 bandits reported by Major Utley as being at Casa Vieja heading towards the Pis Pis or away from it? Just where was Casa Vieja and what was its position relative to the mining area? It did not appear on any of the maps we had, nor did these maps show any trails in that section of the country. Also I realized fully that my boats and the river had, overnight, ceased to be assets and had become liabilities. Taft and his *Galveston* Detachment were at Waspuc in a position to continue the move up the Coco to Bocay. Linscott, Rose, Walker, Whaling were moving in from the east and they had animals with which they could keep right on moving, into Matagalpa if necessary. And there was I, in the middle. The outlaws were just ahead of me; the scent was still warm. At the moment I was closer to them than anyone else; but they were traveling overland, and my flat bottomed scows had no wheels. Some kind of pack animal—any kind—was an absolute necessity unless I wished to find myself sitting at Kuabul, twiddling my thumbs, while the chase went merrily on. There was a possibility that I might find the answers to some of these questions as well as the transportation I needed in the Pis Pis. As soon as breakfast was over, I turned the command of the main body again over to Sergeant Schoneberger and, taking Goodling's squad—the only one which had had a good night's rest—started for Great Falls and Neptune.

Great Falls gets its name from the sheer drop of over a hundred feet which the Pis Pis Creek makes at that point. Here there was a power plant which generated the electricity needed for Neptune Mine, some ten miles further south. The plant was deserted, but it had not been destroyed nor tampered with by the bandits.

Before reaching the mine itself, I came to the home of an English speaking prospector, Christian Hansen. Besides confirming the report brought back to Waspuc by

¹⁰Author's foot-note: Although Hansen distinctly told me that Sandino's new headquarters would be in the mountains northwest of Bocay and actually sketched on the ground the place he thought would be its probable location, the outlaws moved from the mining area to Garrobo, a mountainous country southwest of Bocay.

my reconnaissance patrol of the latter part of April, I learned that at least four bandit groups had operated in the area, two of them under Sanchez and Jiron being well-mounted, well-armed, and with plenty of ammunition. Bandit headquarters had been established at the Lone Star Mine during the week that they had remained in the vicinity. Sandino was supposed to have been there and to have personally conducted the raiding and destruction of La Luz. The main body had left for the west in two groups; one via the LA LUZ-CUVALI-MATAGALPA trail; the other over the NEPTUNE-SAN PEDRO-CASA VIEJA trail. Sandino had gone by the former route. He was reported to be moving to a newly prepared stronghold in the mountains northwest (southwest?) of Bocay.¹⁰ Aguerro and his ragamuffin vagabonds had appeared from the west after the main body of bandits had left, swinging south and east to Tunki and then northward through Neptune. Although he had a written commission as Colonel signed by Sandino, at that time he was not directly connected with him and was acting as a free lance, evidently with the idea of proving his worth before being regularly admitted to the noble band fighting "por patria y libertad." From Hansen I also gained considerable information regarding the numerous trails leading north, west and south from the Pis Pis. Casa Vieja was quite definitely located and it seemed probable that the 200 bandits reported there were those under Jiron who had taken that route when evacuating the mines. So far as Aguerro was concerned, he had undoubtedly taken the trail which Hansen assured me existed from the headwaters of the Waspuc River to Lakus Creek and thence to Bocay; or he might have swung south through Augustine Rivera's ranch on the Casca River and thence to Casa Vieja and the west. He was not certain about a trail from Musawas to Casca, but there was no doubt of one from the latter place to Casa Vieja. Hansen, himself, had no pack animals; but he thought that there were some which had been used by Aguerro for packing his loot from Neptune to the Waspuc River and which belonged to a couple of local residents. He also believed that Rivera must have a pack train at Casca. There was a trail from Great Falls to Casca which was in good condition and could be covered in about six hours. So far as Hansen knew, there were now no outlaws in the area and all was quiet. He already had news of the Prinzapolka Patrol on its way up that river, but he had not known of our advance south from Waspuc nor was he aware of Linscott's and Walker's approach from Puerto Cabezas.

(To be concluded)



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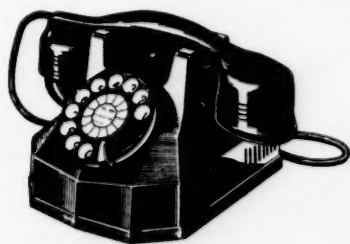
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